

(NASA-SP-7064-Suppl-3) NASA THESAURUS
SUPPLEMENT: A FOUR PART CUMULATIVE
SUPPLEMENT TO THE 1988 EDITION OF THE NASA
THESAURUS (SUPPLEMENT 3) Semiannual Report
(NASA) 33 p

N90-22438

Unclass

CSCL 05B H1/82 0275556

NASA SP-7064
(Suppl. 3)

NASA THESAURUS SUPPLEMENT

MARCH 1990

A four part cumulative
supplement to the 1988 edition
of the *NASA Thesaurus*.



National Aeronautics and
Space Administration
Office of Management
Scientific and Technical
Information Division
1990

INTRODUCTION

Contents of the Supplement

The *NASA Thesaurus Supplement* is a cumulative update of the 1988 edition of the *NASA Thesaurus*, NASA SP-7064. Supplements are normally published every six months. Users should consult the online thesaurus for complete and up-to-date information.

Part 1 of the *Supplement* updates Volume 1 of the 1988 *NASA Thesaurus*, the *Hierarchical Listing*. Complete hierarchies of all new terms are given. Changes in the hierarchies of terms are not included in order to control the size of the *Supplement*. New terms to this supplement are indicated by a bullet.

Part 2 updates Volume 2 of the 1988 *NASA Thesaurus*, the *Access Vocabulary*. All new terms are listed in alphabetical order along with USE references (permuted forms of posting terms and other cross-references).

Part 3 is a list of supplemental definitions of *NASA Thesaurus* posting terms, updating Volume 3 of the *NASA Thesaurus*. New terms are indicated by a bullet.

Part 4 is a list of changes. Users requiring additional information should consult the 1988 *NASA Thesaurus*. Comments about the *NASA Thesaurus* and the *Supplement* should be addressed to: Lexicographer, NASA Scientific and Technical Information Facility, P.O. Box 8757, BWI Airport, MD 21240.

Thesaurus Term Definitions

Publication of *NASA Thesaurus* definitions began with *Supplement 1* to the 1985 *NASA Thesaurus*. Beginning with the 1988 edition, definitions were published as Volume 3 of the *NASA Thesaurus*. Succeeding *Supplements* will contain only new definitions added after the publication of the 1988 edition.

Definitions are given for most terms added since 1976 as well as for many earlier terms. Definitions of more common or general scientific terms are given a NASA slant if one exists. Certain terms are not defined as a matter of policy: common place names, chemical elements, specific models of computers, and non-technical terms. Other terms lack definitions because the *NASA Thesaurus* predates by a number of years the systematic effort to define terms. Nevertheless, definitions of older terms are continually being added.

The following data are provided for each definition: term in uppercase-lowercase form, definition *per se*, source, and year the term (not the definition) was added to the *NASA Thesaurus*. The NASA History Office is the authority for capitalization in satellite and spacecraft names.

Sources of Definitions

Definitions with no source given were constructed by lexicographers at the NASA Scientific and Technical Information (STI) Facility, who rely on the following sources for their information: experts in the field, literature searches from the NASA STI Database, and specialized references.

Definitions come from the following sources:

AGI. *Glossary of Geology*, 3rd edition. Alexandria, VA, American Geological Institute, 1987.

ASTM. *Compilation of ASTM Standard Definitions*, 6th edition. Philadelphia, PA, ASTM, 1986. Copyright, the American Society for Testing and Materials (ASTM). All rights reserved. Used with the permission of ASTM. Two ASTM sources are distinguished: standards are identified by an alphanumeric designation with no hyphen; committees are identified by an alphanumeric designation with a hyphen. The original definitions appeared in the *Annual Book of ASTM Standards*.

DOE. *Energy Data Base Subject Thesaurus* (DOE/TIC-7000-R7). Oak Ridge, TN, Department of Energy, 1987.

IEEE. *Standard Dictionary of Electrical and Electronics Terms*, Fourth ed., New York, NY, IEEE, 1988.

SP-7. *Dictionary of Technical Terms for Aerospace Use*, NASA SP-7. Washington, DC, NASA, 1965.

In some cases, definitions from these sources have been subjected to minor editorial alterations, for example, to make a definition agree in number with the NASA form of the term.

Retrospective Indexing

Since 1984 all new terms are retrospectively assigned to past database records using a method which combines automated search strategies and manual review.

Record updating usually takes place within three months following the addition of a new term to the *NASA Thesaurus* and covers the period from 1968 to date.

Boldfaced Terms in Definitions

With the third *NASA Thesaurus Supplement*, *NASA Thesaurus* terms that appear in the main text of a definition and are also defined separately are boldfaced. Such boldfaced terms, including previously defined terms will appear for the most part in the definitions part of the *Supplement*. A new program for computer aided editing of boldfacing uses NASA's existing Machine Aided Indexing (MAI) programs to identify variant forms of terms that can be regularized with *NASA Thesaurus* terminology and thus provide more extensive cross-referencing through boldfacing. This system of linkages facilitates the use of definitions as they are added and intertwines new definitions with previous material.

Standardized Geology Definitions Included

As noted earlier, *NASA Thesaurus* terms that have been defined in the third edition of the American Geological Institute's "Glossary of Geology" are now being added to *NASA Thesaurus Supplements*. The "Glossary of Geology" is a standardized and widely accepted authority in the field of geology terminology. As with previous sources such as ASTM, DOE, IEEE, and SP-7, editorial alterations are sometimes made primarily for plurality and now, with the aid of MAI, of term form for boldfacing.

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HIERARCHICAL LISTING

A listing of new *NASA Thesaurus* terms and their hierarchies supplementing the *NASA Thesaurus Hierarchical Listing*.

PART 2

ACCESS VOCABULARY

A permuted list of new *NASA Thesaurus* terms supplementing the *NASA Thesaurus Access Vocabulary*. Includes uppercase-lowercase information.

PART 3

DEFINITIONS

A cumulative list of new definitions of *NASA Thesaurus* terms. Uppercase-lowercase information is included.

PART 4

CHANGES

A list of new deletions, transfers and changes to the *NASA Thesaurus*.

NASA THESAURUS SUPPLEMENT

PART 1 HIERARCHICAL LISTING

A

- ACOUSTIC COUPLING
 - GS COUPLING
 - RT ACOUSTIC COUPLING
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 - ACOUSTIC EXCITATION
 - ACOUSTICS
 - ENERGY TRANSFER
 - SOUND WAVES
 - WAVE INTERACTION
- ADVANCED LAUNCH SYSTEM (STS)
 - UF ALS (LAUNCH SYSTEM)
 - GS TRANSPORTATION
 - SPACE TRANSPORTATION
 - SPACE TRANSPORTATION SYSTEM
 - RT ADVANCED LAUNCH SYSTEM (STS)
 - HEAVY LIFT LAUNCH VEHICLES
 - LAUNCH VEHICLE CONFIGURATIONS
 - LAUNCH VEHICLES
 - NASA PROGRAMS
 - NASA SPACE PROGRAMS
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 - REUSABLE LAUNCH VEHICLES
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 - BOOSTER ROCKET ENGINES
 - SPACE SHUTTLE BOOSTERS
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 - SOLID PROPELLANT ROCKET ENGINES
 - SPACE SHUTTLE BOOSTERS
 - ADVANCED SOLID ROCKET MOTOR (STS)
 - RT SPACE SHUTTLE ASCENT STAGE
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- GS MODELS
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 - ATMOSPHERIC GENERAL CIRCULATION MODELS
- RT ATMOSPHERIC CIRCULATION
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AVHRR

- USE ADVANCED VERY HIGH RESOLUTION RADIOMETER

B

• BEAMED POWER

- USE POWER BEAMING

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 - FIELD ALIGNED CURRENTS
 - BIRKELAND CURRENTS
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- PHASE MODULATION
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- SPACE SHUTTLES
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- COMPUTER PROGRAMMING
- EXPERT SYSTEMS

CAMBRIAN PERIOD

CAMBRIAN PERIOD

GS PALEOZOIC ERA
CAMBRIAN PERIOD
RT GEOCHRONOLOGY
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CASSINI MISSION

GS SPACE MISSIONS
CASSINI MISSION
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GS SPACE MISSIONS
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ASTEROID MISSIONS
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RT MARINER MARK 2 SPACECRAFT
MISSIONS
NASA SPACE PROGRAMS

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RT COMETARY ATMOSPHERES
COMETS
MAGNETOSPHERES

COMMUTER AIRCRAFT

GS PASSENGER AIRCRAFT
COMMUTER AIRCRAFT
RT AIR TRANSPORTATION
AIRCRAFT
COMMERCIAL AIRCRAFT
GENERAL AVIATION AIRCRAFT

COMPACT GALAXIES

GS CELESTIAL BODIES
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RT GALACTIC STRUCTURE

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GS COMPUTATION
COMPUTATIONAL GEOMETRY
GEOMETRY
COMPUTATIONAL GEOMETRY
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COMPUTER VIRUSES

RT COMPUTER INFORMATION SECURITY
COMPUTER PROGRAM INTEGRITY
COMPUTER PROGRAMMING
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GS CONDUCTORS
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CRACK OPENING DISPLACEMENT

UP COD (CRACKS)
GS DISPLACEMENT
CRACK OPENING DISPLACEMENT
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CRACKING (FRACTURING)
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MISSION

CRETACEOUS PERIOD

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RT CRETACEOUS-TERTIARY BOUNDARY
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PALEONTOLOGY
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CRETACEOUS-TERTIARY BOUNDARY

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CRETACEOUS PERIOD
EXTINCTION
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MESOZOIC ERA
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GS PROGRAMS
SPACE PROGRAMS
EUROPEAN SPACE PROGRAMS
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PROGRAM
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D

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GS COMPUTER PROGRAMS
COMPUTER SYSTEMS PROGRAMS
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DISK OPERATING SYSTEM (DOS)
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ROUTINES
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DJIBOUTI

GS NATIONS
DJIBOUTI
RT AFRICA

E

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GS GRATINGS (SPECTRA)
ECHELLE GRATINGS
RT DIFFRACTION
ECHLETTE GRATINGS
REFLECTION

• EDGE DETECTION

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GS DETECTION
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PATTERN RECOGNITION
SCENE ANALYSIS

• EFFECTORS

SN *USE OF A MORE SPECIFIC TERM IS
RECOMMENDED-CONSULT THE TERMS
LISTED BELOW*
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MEASUREMENT
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SPACE SHUTTLE ORBITERS
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 FIELD ALIGNED CURRENTS
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 EARTH IONOSPHERE
 EARTH MAGNETOSPHERE
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 MAGNETOACTIVITY
 FLUX TRANSFER EVENTS
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 GEOMAGNETISM
 INTERPLANETARY MAGNETIC FIELDS
 LINES OF FORCE
 MAGNETIC EFFECTS
 MAGNETIC FIELD CONFIGURATIONS
 MAGNETIC FIELD RECONNECTION
 MAGNETIC FIELDS
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 USE SH WAVES

HORIZONTALLY POLARIZED SHEAR WAVES
 USE SH WAVES

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 ASTRONOMICAL OBSERVATORIES
 ASTRONOMICAL SATELLITES
 LARGE DEPLOYABLE REFLECTOR
 TELESCOPES
 INFRARED TELESCOPES
 LARGE DEPLOYABLE REFLECTOR
 REFLECTING TELESCOPES
 LARGE DEPLOYABLE REFLECTOR
 SPACEBORNE TELESCOPES
 LARGE DEPLOYABLE REFLECTOR
 RT INFRARED ASTRONOMY
 LARGE SPACE STRUCTURES
 REFLECTORS
 SPACE ERECTABLE STRUCTURES
 SUBMILLIMETER WAVES

LASER BEAMS

SN LIMITED TO THE TRANSMISSION AND
 INTERACTIONS OF LASER RADIATION
 FOR THE QUANTITATIVE AND
 QUALITATIVE CHARACTERISTICS OF THE
 RADIATION PRODUCED BY A LASER
 USE LASER OUTPUTS)
 (LASER RADIATION
 BEAMS (RADIATION)
 GS LIGHT BEAMS
 LASER BEAMS
 COHERENT RADIATION
 COHERENT ELECTROMAGNETIC
 RADIATION
 LASER BEAMS
 ELECTROMAGNETIC RADIATION
 COHERENT ELECTROMAGNETIC
 RADIATION
 LASER BEAMS
 LIGHT BEAMS
 LASER BEAMS

• LASER POWER BEAMING

UF POWER TRANSMISSION (LASERS)
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LASER RADIATION

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LASER PROPULSION
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MICROWAVE TRANSMISSION
SATELLITE POWER TRANSMISSION
SPACECRAFT POWER SUPPLIES

LASER RADIATION

USE LASER BEAMS

LDR (TELESCOPE)

USE LARGE DEPLOYABLE REFLECTOR

LEARNING MACHINES

USE MACHINE LEARNING

LIGHT HELICOPTERS

GS LIGHT AIRCRAFT
LIGHT HELICOPTERS
OH-4 HELICOPTER
OH-5 HELICOPTER
OH-6 HELICOPTER
OH-58 HELICOPTER
V/STOL AIRCRAFT
ROTARY WING AIRCRAFT
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LIGHT HELICOPTERS
OH-4 HELICOPTER
OH-5 HELICOPTER
OH-6 HELICOPTER
OH-58 HELICOPTER
RT AIRCRAFT
MILITARY HELICOPTERS
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LIQUID OXYGEN HYDROCARBON ROCKET ENGINES

USE OXYGEN-HYDROCARBON ROCKET ENGINES

LOR-HYDROCARBON ROCKET ENGINES

USE OXYGEN-HYDROCARBON ROCKET ENGINES

LUXEMBOURG SPACE PROGRAM

GS PROGRAMS
SPACE PROGRAMS
EUROPEAN SPACE PROGRAMS
LUXEMBOURG SPACE PROGRAM
RT LUXEMBOURG

M

MACHINE LEARNING

UP LEARNING MACHINES
GS AUTOMATIC CONTROL
ADAPTIVE CONTROL
MACHINE LEARNING
RT ARTIFICIAL INTELLIGENCE
AUTOMATA THEORY
CYBERNETICS
FEEDBACK CONTROL
MACHINERY
SELF ORGANIZING SYSTEMS
TEACHING MACHINES

MAN TENDED FREE FLYERS

UP MTFF (SPACE STATION)
GS MANNED SPACECRAFT
MAN TENDED FREE FLYERS
SPACE PLATFORMS
MAN TENDED FREE FLYERS
STATIONS
SPACE STATIONS
MAN TENDED FREE FLYERS
RT COLUMBUS SPACE STATION
EUROPEAN SPACE PROGRAMS
HERMES MANNED SPACEPLANE
INTRAORBIT TRANSFER VEHICLES
ORBIT TRANSFER VEHICLES
ORBITAL SERVING
RECOVERABLE SPACECRAFT
SPACE STATION PAYLOADS
SPACEBORNE EXPERIMENTS
SPACECRAFT MODULES

MARS ROVER SAMPLE RETURN MISSION

USE MARS SAMPLE RETURN MISSIONS

MARS SAMPLE RETURN MISSIONS

UP MARS ROVER SAMPLE RETURN MISSION
GS SPACE MISSIONS
MARS SAMPLE RETURN MISSIONS
RT MARS (PLANET)
MARS LANDING
MARS PROBES
MARS SURFACE SAMPLES
NASA SPACE PROGRAMS
ROVING VEHICLES
SAMPLES
SPACE EXPLORATION

MASER MATERIALS

RT LASER MATERIALS
MASERS
MATERIALS

MASER PUMPING

RT LASER PUMPING
MASER OUTPUTS
MASERS
OPTICAL PUMPING
PUMPING

MASS DRIVERS

RT ACCELERATORS
ELECTROMAGNETIC ACCELERATION
ELECTROMAGNETIC PROPULSION
LAUNCHERS
MAGNETIC LEVITATION VEHICLES
MOON-EARTH TRAJECTORIES
PROPULSION
RAILGUN ACCELERATORS
SPACECRAFT PROPULSION

MASSIVELY PARALLEL PROCESSORS

UP MPP (COMPUTERS)
GS DATA PROCESSING EQUIPMENT
COMPUTERS
DIGITAL COMPUTERS
PARALLEL COMPUTERS
MASSIVELY PARALLEL PROCESSORS
RT ARCHITECTURE (COMPUTERS)
PARALLEL PROCESSING (COMPUTERS)

MATTER-ANTIMATTER PROPULSION

GS PROPULSION
SPACECRAFT PROPULSION
MATTER-ANTIMATTER PROPULSION
RT ANNIHILATION REACTIONS
ANTIMATTER
INTERPLANETARY FLIGHT
INTERPLANETARY SPACECRAFT
INTERSTELLAR TRAVEL
NUCLEAR PROPULSION
POSITRON ANNIHILATION
ROCKET ENGINES

MAURITIUS

GS LANDFORMS
ISLANDS
MAURITIUS
NATIONS
MAURITIUS
RT AFRICA
INDIAN OCEAN

MESH GENERATION (MATHEMATICS)

USE GRID GENERATION (MATHEMATICS)

MESOZOIC ERA

GS MESOZOIC ERA
CRETACEOUS PERIOD
RT CRETACEOUS-TERTIARY BOUNDARY
GEOCHRONOLOGY
PALEONTOLOGY
PALEOZOIC ERA

MEXICAN SPACE PROGRAM

GS PROGRAMS
SPACE PROGRAMS
MEXICAN SPACE PROGRAM
RT MEXICO

MICROWAVE POWER BEAMING

UP POWER TRANSMISSION (MICROWAVE)
GS POWER BEAMING
MICROWAVE POWER BEAMING
RT LASER POWER BEAMING
MICROWAVE TRANSMISSION
SATELLITE POWER TRANSMISSION

NASA THESAURUS SUPPLEMENT (PART 1)

MICROWAVE POWER BEAMING (CONT.) SPACECRAFT POWER SUPPLIES

MICROWAVE SIGNATURES

GS SIGNATURES
SPECTRAL SIGNATURES
MICROWAVE SIGNATURES
RT BACKSCATTERING
MICROWAVE EMISSION
MICROWAVE SCATTERING
MICROWAVES
RADAR SIGNATURES
SIGNATURE ANALYSIS

MIXING LAYERS (FLUIDS)

RT ADVECTION
ATMOSPHERIC BOUNDARY LAYER
ATMOSPHERIC STRATIFICATION
BOUNDARY LAYERS
CONVECTION
EXMAN LAYER
JET MIXING FLOW
LAMINAR MIXING
LAYERS
MIXING
MIXING LENGTH FLOW THEORY
SHEAR LAYERS
TURBULENT BOUNDARY LAYER
TURBULENT MIXING
TWO FLUID MODELS

MOONLETS

GS CELESTIAL BODIES
MOONLETS
RT JUPITER RINGS
NATURAL SATELLITES
PLANETARY RINGS
SATURN RINGS
URANUS RINGS

MPP (COMPUTERS)

USE MASSIVELY PARALLEL PROCESSORS

MTFF (SPACE STATION)

USE MAN TENDED FREE FLYERS

N

NEPTUNE SATELLITES

GS CELESTIAL BODIES
NATURAL SATELLITES
NEPTUNE SATELLITES
NEREID
TRITON

NEREID

GS CELESTIAL BODIES
NATURAL SATELLITES
NEPTUNE SATELLITES
NEREID
RT NEPTUNE (PLANET)

NETHERLANDS SPACE PROGRAM

GS PROGRAMS
SPACE PROGRAMS
EUROPEAN SPACE PROGRAM
NETHERLANDS SPACE PROGRAM
RT ASTRONOMICAL NETHERLANDS
SATELLITE
NETHERLANDS

NEW ZEALAND SPACE PROGRAM

GS PROGRAMS
SPACE PROGRAMS
NEW ZEALAND SPACE PROGRAM
RT NEW ZEALAND

NORTHERN IRELAND

GS NATIONS
UNITED KINGDOM
NORTHERN IRELAND
RT EUROPE

NUCLEAR ASTROPHYSICS

GS ASTROPHYSICS
NUCLEAR ASTROPHYSICS
NUCLEAR PHYSICS
NUCLEAR ASTROPHYSICS
RT COSMOLOGY
NUCLEAR PARTICLES

NUCLEAR ASTROPHYSICS (CONT.)
STELLAR PHYSICS

NUCLEAR BUZZ (GALAXIES)
USE GALACTIC BUZZ

O

• OLIGOMERS

RT MONOMERS
POLYMERIZATION
POLYMERS

OPTICAL MATERIALS

RT GLASS
INFRARED WINDOWS
LENSES
MATERIALS
MIRRORS
OPTICAL FIBERS
WINDOWS (APERTURES)

• ORBITAL BREAKUP

USE SPACECRAFT BREAKUP

OXYGEN-HYDROCARBON ROCKET ENGINES

UF LIQUID OXYGEN HYDROCARBON
ROCKET ENGINES
LOX-HYDROCARBON ROCKET ENGINES
GS ENGINES
ROCKET ENGINES
LIQUID PROPELLANT ROCKET
ENGINES
OXYGEN-HYDROCARBON ROCKET
ENGINES
RT BOOSTER ROCKET ENGINES
LIQUID OXYGEN
REUSABLE ROCKET ENGINES
SPACECRAFT PROPULSION

P

PALEOZOIC ERA

GS PALEOZOIC ERA
CAMBRIAN PERIOD
RT GEOCHRONOLOGY
MESOZOIC ERA
PALEONTOLOGY
PRECAMBRIAN PERIOD

• PAN (POLYACRYLONITRILE)

USE POLYACRYLONITRILE

PECULIAR GALAXIES

GS CELESTIAL BODIES
GALAXIES
PECULIAR GALAXIES

PHASE SEPARATION (MATERIALS)

RT BINARY SYSTEMS (MATERIALS)
LIQUID PHASES
MISCIBILITY GAP
PHASE DIAGRAMS
PHASE TRANSFORMATIONS
SEPARATION
SOLID PHASES
SOLUBILITY

• POLYACRYLONITRILE

UF PAN (POLYACRYLONITRILE)
GS NITRILES
ACRYLONITRILES
POLYACRYLONITRILE
RT ACRYLIC RESINS
CARBON FIBERS
POLYMERS
SYNTHETIC FIBERS

• POLYBLEND

USE POLYMER BLENDS

• POLYMER BLENDS

UF POLYBLEND
GS MIXTURES
POLYMER BLENDS
RT COPOLYMERS

POLYMER BLENDS (CONT.)

POLYMER PHYSICS
POLYMERS
THERMOPLASTIC RESINS

• POWER BEAMING

UF BEAMED POWER
GS POWER BEAMING
LASER POWER BEAMING
MICROWAVE POWER BEAMING
SATELLITE POWER TRANSMISSION
RT ENERGY CONVERSION
LASER PROPULSION
MICROWAVE TRANSMISSION
POWER TRANSMISSION
SOLAR POWER SATELLITES
SPACECRAFT POWER SUPPLIES

• POWER TRANSMISSION (LASERS)

USE LASER POWER BEAMING

• POWER TRANSMISSION (MICROWAVE)

USE MICROWAVE POWER BEAMING

PROPELLER NOISE

GS ELASTIC WAVES
SOUND WAVES
NOISE (SOUND)
AERODYNAMIC NOISE
PROPELLER NOISE
AIRCRAFT NOISE
PROPELLER NOISE
RT ACOUSTIC RETROFITTING
AERODYNAMICS
BLADE SLAP NOISE
ENGINE NOISE
MUFFLERS
NOISE INTENSITY
NOISE MEASUREMENT
NOISE PREDICTION (AIRCRAFT)
NOISE REDUCTION
SOUND FIELDS
SOUND TRANSMISSION

PROTEIN CRYSTAL GROWTH

GS GROWTH
CRYSTAL GROWTH
PROTEIN CRYSTAL GROWTH
RT PROTEIN SYNTHESIS
PROTEINS
SPACE PROCESSING

PULSAR MAGNETOSPHERES

GS STELLAR MAGNETOSPHERES
PULSAR MAGNETOSPHERES
RT MAGNETIC FIELDS
MAGNETOSPHERES
PULSARS
STELLAR ATMOSPHERES
STELLAR MAGNETIC FIELDS

Q

QATAR

GS NATIONS
QATAR
RT ASIA

R

• RECORDS MANAGEMENT

GS MANAGEMENT
INFORMATION MANAGEMENT
RECORDS MANAGEMENT
RT DATA MANAGEMENT
INFORMATION SYSTEMS
MANAGEMENT INFORMATION SYSTEMS
RECORDS

• REENTRY BREAKUP

USE SPACECRAFT BREAKUP

RESONANT TUNNELING

RT BARRIER LAYERS
ELECTRON TUNNELING

RESONANT TUNNELING (CONT.)

NEGATIVE RESISTANCE DEVICES
QUANTUM ELECTRONICS
QUANTUM WELLS
TRANSISTORS
TUNNEL DIODES
TUNNELING

RHODAMINE

GS DYES
RHODAMINE
ORGANIC COMPOUNDS
CYCLIC COMPOUNDS
RHODAMINE
RT AMINES
DYE LASERS
FLUORESCENCE
LASER MATERIALS

RIBBETS

GS GROOVES
V GROOVES
RIBBETS
RT BOUNDARY LAYER CONTROL
DRAG REDUCTION
FRICTION DRAG
SHEAR LAYERS
SKIN FRICTION
STRIATION
TURBULENT BOUNDARY LAYER
VORTEX ALLEVIATION

RING GALAXIES

GS CELESTIAL BODIES
GALAXIES
RING GALAXIES
RT GALACTIC STRUCTURE

• ROBOT ARMS

UF ARMS (ROBOTICS)
RT END EFFECTORS
MANIPULATORS
ROBOT DYNAMICS
ROBOTICS
ROBOTS

• ROBOT DYNAMICS

UF ROBOT MOTION
RT DYNAMIC CONTROL
DYNAMICS
END EFFECTORS
MANIPULATORS
ROBOT ARMS
ROBOTICS

• ROBOT MOTION

USE ROBOT DYNAMICS

• ROBOT SENSORS

RT COMPUTER VISION
ROBOTICS
ROBOTS
SENSORS

ROTATIONAL SPECTRA

GS SPECTRA
MOLECULAR SPECTRA
ROTATIONAL SPECTRA
RT ABSORPTION SPECTRA
LINE SPECTRA
MOLECULAR EXCITATION
MOLECULAR ROTATION
MOLECULAR SPECTROSCOPY
VIBRATIONAL SPECTRA

ROTOR DYNAMICS

UF ROTORDYNAMICS
RT DYNAMIC CHARACTERISTICS
DYNAMIC RESPONSE
DYNAMIC STABILITY
DYNAMICS
ROTARY STABILITY
ROTARY WINGS
ROTOR AERODYNAMICS
ROTORS
STRUCTURAL VIBRATION
TURBOMACHINERY

ROTOR DYNAMICS

USE ROTOR DYNAMICS

SATELLITE BREAKUP

S

• SATELLITE BREAKUP

USE SPACECRAFT BREAKUP

• SATELLITE FRAGMENTATION

USE SPACECRAFT BREAKUP

• SATELLITE POWER TRANSMISSION

GS POWER BEAMING
SATELLITE POWER TRANSMISSION
RT LASER POWER BEAMING
MICROWAVE POWER BEAMING
RECTENNAS
SOLAR ARRAYS
SOLAR CELLS
SOLAR POWER SATELLITES

SCANNING TUNNELING MICROSCOPY

GS MICROSCOPY
ELECTRON MICROSCOPY
SCANNING TUNNELING MICROSCOPY
RT ELECTRON MICROSCOPES
ELECTRON TUNNELING

SEEING (ASTRONOMY)

UF ATMOSPHERIC SEEING
RT ASTRONOMICAL OBSERVATORIES
ASTRONOMY
ATMOSPHERIC EFFECTS
ATMOSPHERIC OPTICS
ATMOSPHERIC TURBULENCE
OPTICAL CORRECTION PROCEDURE
SCINTILLATION
SPACE OBSERVATIONS (FROM EARTH)
TELESCOPES
TURBULENCE EFFECTS
VISUAL OBSERVATION

SEYCHELLES

GS LANDFORMS
ISLANDS
SEYCHELLES
NATIONS
SEYCHELLES
RT AFRICA
INDIAN OCEAN

SH WAVES

UF HORIZONTAL POLARIZED SHEAR WAVES
HORIZONTALLY POLARIZED SHEAR
WAVES
GS ELASTIC WAVES
S WAVES
SH WAVES
RT NONDESTRUCTIVE TESTS
SEISMIC WAVES
TRANSVERSE WAVES
ULTRASONIC TESTS
WAVES

SHELL STARS

GS CELESTIAL BODIES
STARS
PECULIAR STARS
SHELL STARS
RT S STARS
STELLAR ENVELOPES

SINGLE INPUT SINGLE OUTPUT SYSTEMS

USE SISO (CONTROL SYSTEMS)

SIS (SUPERCONDUCTORS)

UF SUPERCONDUCTOR INSULATOR
SUPERCONDUCTORS
GS ELECTRONIC EQUIPMENT
SOLID STATE DEVICES
SIS (SUPERCONDUCTORS)
RT HIGH TEMPERATURE
SUPERCONDUCTORS
JOSEPHSON JUNCTIONS
SQUID (DETECTORS)

SISO (CONTROL SYSTEMS)

UF SINGLE INPUT SINGLE OUTPUT
SYSTEMS
RT CONTROL
CONTROL STABILITY
CONTROL SYSTEMS DESIGN
CONTROL THEORY
FEEDBACK CONTROL
SYSTEMS
SYSTEMS STABILITY

• SOHO MISSION

UF SOLAR AND HELIOSPHERIC
OBSERVATORY
GS SPACE MISSIONS
SOHO MISSION
RT CLUSTER MISSION
ESA SATELLITES
EUROPEAN SPACE PROGRAMS
HELIOSPHERE
INTERNATIONAL COOPERATION
MISSIONS
SCIENTIFIC SATELLITES
SOLAR CORONA
SOLAR INTERIOR
SOLAR OBSERVATORIES
SOLAR WIND

• SOLAR AND HELIOSPHERIC OBSERVATORY

USE SOHO MISSION

• SPACECRAFT BREAKUP

UF BREAKUP (SPACECRAFT)
ORBITAL BREAKUP
REENTRY BREAKUP
SATELLITE BREAKUP
SATELLITE FRAGMENTATION
RT ATMOSPHERIC ENTRY
DESTRUCTION
HAZARDS
METEOROID HAZARDS
ORBIT DECAY
REENTRY EFFECTS
SPACE DEBRIS
SPACECRAFT REENTRY
SPACECRAFT SURVIVABILITY
UNCONTROLLED REENTRY
(SPACECRAFT)
WRECKAGE

SPACECRAFT ENVIRONMENTS

GN LIMITED TO SPACECRAFT INTERNAL
COMPARTMENTS AND CABINS, FOR
SPACECRAFT EXTERNAL
ENVIRONMENTS REFER TO
(EXTRATERRESTRIAL ENVIRONMENTS)
GS ENVIRONMENTS
SPACECRAFT ENVIRONMENTS
RT AEROSPACE MEDICINE
ASTRONAUTS
BIOSTRANAUTICS
CLOSED ECOLOGICAL SYSTEMS
CONTROLLED ATMOSPHERES
COSMONAUTS
COUCHES
ENVIRONMENTAL CONTROL
EXOBIOLOGY
EXTRATERRESTRIAL ENVIRONMENTS
INTRAVEHICULAR ACTIVITY
LIFE SUPPORT SYSTEMS
ROTATING ENVIRONMENTS
SATELLITE TEMPERATURE
SPACE SIMULATORS
THERMAL ENVIRONMENTS
WEIGHTLESSNESS

SPANISH SPACE PROGRAM

GS PROGRAMS
SPACE PROGRAMS
EUROPEAN SPACE PROGRAMS
SPANISH SPACE PROGRAM
RT SPAIN

STARQUAKES

RT GAMMA RAY BURSTS
NEUTRON STARS
PULSARS
STARS
STELLAR ACTIVITY
STELLAR PHYSICS
STELLAR ROTATION
STELLAR STRUCTURE

STELLAR MAGNETOSPHERES

GS STELLAR MAGNETOSPHERES
PULSAR MAGNETOSPHERES
RT MAGNETIC FIELDS
MAGNETOSPHERES
STELLAR ATMOSPHERES
STELLAR MAGNETIC FIELDS

STONY-IRON METEORITES

GS CELESTIAL BODIES
METEORITES

NASA THESAURUS SUPPLEMENT (PART 1)

STONY-IRON METEORITES-(CONT.)

RT STONY-IRON METEORITES
IRON METEORITES
STONY METEORITES

STRATOSPHERIC WARMING

GS HEATING
ATMOSPHERIC HEATING
STRATOSPHERIC WARMING
RT ANOMALOUS TEMPERATURE ZONES
ATMOSPHERIC HEAT BUDGET
ATMOSPHERIC TEMPERATURE
CLIMATE CHANGE
GLOBAL WARMING
ISOTHERMAL LAYERS
STRATOSPHERE

• STRUCTURED PROGRAMMING

GS SOFTWARE ENGINEERING
COMPUTER PROGRAMMING
STRUCTURED PROGRAMMING
RT DATA STRUCTURES
PROGRAMMING

SUPERCONDUCTING FILMS

RT FILMS
SEMICONDUCTING FILMS
SUPERCONDUCTORS
THIN FILMS
THIN FILMS

SUPERCONDUCTOR INSULATOR

SUPERCONDUCTORS
USE SIS (SUPERCONDUCTORS)

T

TERTIARY PERIOD

GS CENOZOIC ERA
TERTIARY PERIOD
RT CRETACEOUS PERIOD
CRETACEOUS-TERTIARY BOUNDARY
GEOCHRONOLOGY
PALEONTOLOGY

THREE DIMENSIONAL MODELS

GS MODELS
THREE DIMENSIONAL MODELS
RT COMPUTATIONAL GRIDS
COMPUTER AIDED DESIGN
COMPUTERIZED SIMULATION
MATHEMATICAL MODELS
TWO DIMENSIONAL MODELS

TOLLMIEN-SCHLICHTING WAVES

GS ELASTIC WAVES
TOLLMIEN-SCHLICHTING WAVES
RT BLAUS FLOW
BOUNDARY LAYER FLOW
BOUNDARY LAYER TRANSITION
LAMINAR FLOW
TURBULENT FLOW

TOMS

USE TOTAL OZONE MAPPING
SPECTROMETER

TOTAL OZONE MAPPING SPECTROMETER

UF TOMS
GS MEASURING INSTRUMENTS
OPTICAL MEASURING INSTRUMENTS
PHOTOMETERS
ULTRAVIOLET SPECTROMETERS
TOTAL OZONE MAPPING
SPECTROMETER
RADIATION MEASURING INSTRUMENTS
ACTINOMETERS
ULTRAVIOLET DETECTORS
ULTRAVIOLET SPECTROMETERS
TOTAL OZONE MAPPING
SPECTROMETER
PHOTOMETERS
ULTRAVIOLET SPECTROMETERS
TOTAL OZONE MAPPING
SPECTROMETER
SATELLITE-BORNE INSTRUMENTS
TOTAL OZONE MAPPING
SPECTROMETER
SPECTROMETERS
ULTRAVIOLET SPECTROMETERS

TOTAL OZONE MAPPING (CONT.)

- ... TOTAL OZONE MAPPING
SPECTROMETER
- OPTICAL EQUIPMENT
- OPTICAL MEASURING INSTRUMENTS
- PHOTOMETERS
- ... ULTRAVIOLET SPECTROMETERS
- ... TOTAL OZONE MAPPING
SPECTROMETER
- RT ANTARCTIC REGIONS
- NNBUS 7 SATELLITE
- OZONE DEPLETION
- OZG OMETRY

• TOTAL VARIATION DIMINISHING SCHEMES

- USE TVD SCHEMES

• TRANSITION FLIGHT

- RT AIRCRAFT MANEUVERS
- oo FLIGHT
- HORIZONTAL FLIGHT
- HOVERING
- V/STOL AIRCRAFT
- VERTICAL FLIGHT

• TRANSPUTERS

- GS DATA PROCESSING EQUIPMENT
- COMPUTERS
- TRANSPUTERS
- RT ARCHITECTURE (COMPUTERS)
- DISTRIBUTED PROCESSING
- INTERPROCESSOR COMMUNICATION
- MICROPROCESSORS
- PARALLEL PROCESSING (COMPUTERS)

TRAPPED VORTICES

- UF VORTEX TRAPS
- GS VORTICES
- TRAPPED VORTICES
- RT COUNTERFLOW
- FLD & DISTRIBUTION
- MIXING
- ROTATING FLUIDS
- ROTATING LIQUIDS
- TURBULENT MIXING
- TURBULENT WAKES
- VORTEX RINGS
- VORTICITY

TREND ANALYSIS

- RT oo ANALYZING
- FAILURE ANALYSIS
- PERFORMANCE PREDICTION
- PREDICTION ANALYSIS TECHNIQUES
- RELIABILITY ANALYSIS
- STATISTICAL ANALYSIS
- TIME SERIES ANALYSIS
- TRENDS

TRIPLE STARS

- GS CELESTIAL BODIES
- STARS
- TRIPLE STARS
- RT BINARY STARS
- COMPANION STARS
- STELLAR SYSTEMS
- THREE BODY PROBLEM

TURBULENCE MODELS

- GS MODELS
- MATHEMATICAL MODELS
- TURBULENCE MODELS
- K-EPSILON TURBULENCE MODEL
- RT COMPUTATIONAL FLUID DYNAMICS
- FLOW EQUATIONS
- MIXING LENGTH FLOW THEORY
- TURBULENT BOUNDARY LAYER
- TURBULENT FLOW

• TVD SCHEMES

- UF TOTAL VARIATION DIMINISHING
SCHEMES
- GS ANALYSIS (MATHEMATICS)
- NUMERICAL ANALYSIS
- APPROXIMATION
- TVD SCHEMES
- RT COMPUTATIONAL FLUID DYNAMICS
- FINITE DIFFERENCE THEORY
- FINITE VOLUME METHOD

TWO DIMENSIONAL MODELS

- GS MODELS

TWO DIMENSIONAL MODELS (CONT.)

- RT TWO DIMENSIONAL MODELS
- COMPUTERIZED SIMULATION
- MATHEMATICAL MODELS
- THREE DIMENSIONAL MODELS

U

• UARS (SATELLITE)

- USE UPPER ATMOSPHERE RESEARCH
SATELLITE (UARS)

UNIX (OPERATING SYSTEM)

- GS COMPUTER PROGRAMS
- COMPUTER SYSTEMS PROGRAMS
- ... OPERATING SYSTEMS (COMPUTERS)
- ... UNIX (OPERATING SYSTEM)

• UPPER ATMOSPHERE RESEARCH SATELLITE (UARS)

- UF UARS (SATELLITE)
- GS ARTIFICIAL SATELLITES
- SCIENTIFIC SATELLITES
- UPPER ATMOSPHERE RESEARCH
SATELLITE (UARS)
- RT UPPER ATMOSPHERE

UNELITES

- GS CELESTIAL BODIES
- METEORITES
- ... STONY METEORITES
- ... ACHONDRITES
- ... UNELITES
- ... CARBONACEOUS METEORITES
- ... UNELITES
- RT METEORITIC DIAMONDS

V

VECTOR PROCESSING (COMPUTERS)

- GS DATA PROCESSING
- VECTOR PROCESSING (COMPUTERS)
- RT MULTIPROCESSING (COMPUTERS)
- PARALLEL PROCESSING (COMPUTERS)
- PIPELINING (COMPUTERS)

VECTOR QUANTIZATION

- RT CODING
- DATA COMPRESSION
- DIGITAL TECHNIQUES
- IMAGE PROCESSING
- VECTORS (MATHEMATICS)
- VOICE DATA PROCESSING

• VIDEO TAPE RECORDERS

- GS RECORDING INSTRUMENTS
- VIDEO TAPE RECORDERS
- TAPE RECORDERS
- VIDEO TAPE RECORDERS
- VIDEO EQUIPMENT
- VIDEO TAPE RECORDERS
- RT VIDEO TAPES

VIDEO TAPES

- RT CINEMATOGRAPHY
- oo FILMS
- INFORMATION
- MAGNETIC TAPES
- OTION PICTURES
- PHOTOGRAPHS
- PHOTOGRAPHY
- oo TAPES
- VIDEO TAPE RECORDERS
- VISUAL AIDS

VORTEX TRAPS

- USE TRAPPED VORTICES

W

• WALES

- GS NATIONS
- UNITED KINGDOM

WHISPERING GALLERY MODES

WALES (CONT.)

- WALES
- RT EUROPE

WATER SPLITTING

- RT ELECTROLYSIS
- HYDROGEN PRODUCTION
- SPLITTING

WHISPERING GALLERY MODES

- GS MODES
- PROPAGATION MODES
- WHISPERING GALLERY MODES
- RT ACOUSTIC FREQUENCIES
- ACOUSTIC PROPAGATION
- ELECTROMAGNETIC RADIATION
- ELECTROMAGNETIC WAVE
TRANSMISSION
- WAVE PROPAGATION
- WAVELENGTHS

NASA THESAURUS SUPPLEMENT

PART 2 ACCESS VOCABULARY

A

acoustic coupling
Advanced Launch System (ALS)
Advanced Solid Rocket Motor (ASRM)
Advanced Very High Resolution Radiometer (AVHRR)
aircraft, commuter
 USE commuter aircraft
aligned currents, field
 USE field aligned currents
ALS (launch system)
 USE Advanced Launch System (ALS)
analysis, trend
 USE trend analysis
Antique and Barbed
antimatter propulsion, matter-
 USE matter-antimatter propulsion
application specific integrated circuits
Argentine space program
arms, robot
 USE robot arms
arms (robotics)
 USE robot arms
(artificial intelligence), knowledge bases
 USE knowledge bases (artificial intelligence)
ASAC
 USE application specific integrated circuits
ASRM (ASRM)
 USE Advanced Solid Rocket Motor (ASRM)
Asteroid Flyby Mission, Comet Rendezvous
 USE Comet Rendezvous Asteroid Flyby Mission
(astronomy), infrared cirrus
 USE infrared cirrus (astronomy)
(astronomy), seeing
 USE seeing (astronomy)
astrophysics, nuclear
 USE nuclear astrophysics
Atmosphere Research Satellite (LARS), Upper
 USE Upper Atmosphere Research Satellite (LARS)
atmospheric
(atmospheric), general circulation models
 USE atmospheric
atmospheric seeing
 USE seeing (astronomy)
Australian space program
AVHRR
 USE Advanced Very High Resolution Radiometer

B

Barbed, Antique and
 USE Antique and Barbed
bases (artificial intelligence), knowledge
 USE knowledge bases (artificial intelligence)
beamed power
 USE power beaming
beaming, laser power
 USE laser power beaming
beaming, microwave power
 USE microwave power beaming
beaming, power
 USE power beaming
beams, laser
 USE laser beams
Birkeland currents
blends
blends, polymer
 USE polymer blends
block copolymers
boundary, Cretaceous-Tertiary
 USE Cretaceous-Tertiary boundary
boundary detection (imagery)
 USE edge detection
boundary, K-T
 USE Cretaceous-Tertiary boundary
Bragg cells
breakup, orbital
 USE spacecraft breakup
breakup, reentry
 USE spacecraft breakup
breakup, satellite
 USE spacecraft breakup
breakup, spacecraft
 USE spacecraft breakup
breakup (spacecraft)
 USE spacecraft breakup
brown dwarf stars
bulge, galactic
 USE galactic bulge
bulge (galaxies), central
 USE galactic bulge
bulge (galaxies), nuclear
 USE galactic bulge
Buran space shuttle

C

C (programming language)
Carbonian Period
Cassini mission
cells, Bragg
 USE Bragg cells
Cenozoic Era
central bulge (galaxies)
 USE galactic bulge
chaos
circuits, application specific integrated
 USE application specific integrated circuits
circuits, custom integrated
 USE application specific integrated circuits
circulation models (atmospheric), general
 USE atmospheric
cirrus (astronomy), infrared
 USE infrared cirrus (astronomy)
clouds, ice
 USE ice clouds
Cluster Mission
COB (cracks)
 USE crack opening displacement
Comet Rendezvous Asteroid Flyby Mission
cometary magnetospheres
commuter aircraft
compact galaxies
computational geometry
computer viruses
(computers), MPP
 USE massively parallel processors
(computers), vector processing
 USE vector processing (computers)
conducting polymers
(control systems), SISO
 USE SISO (control systems)
copolymers, block
 USE block copolymers
coupling, etc., etc.
 USE acoustic coupling
coupling, electromagnetic
 USE electromagnetic coupling
crack opening displacement
cracks, COB
 USE crack opening displacement

CRAF Mission

CRAF Mission
USE Comet Rendezvous Asteroid Flyby Mission

Cretaceous Period

Cretaceous-Tertiary boundary

crystal growth, protein
USE protein crystal growth

currents, Birkeland
USE Birkeland currents

currents, field aligned
USE field aligned currents

custom integrated circuits
USE application specific integrated circuits

cytometry

cytophotometry
USE cytometry

Czechoslovakian space program

D

Deployable Reflector, Large
USE Large Deployable Reflector

detection, edge
USE edge detection

detection (imagery), boundary
USE edge detection

dimensional models, three
USE three dimensional models

dimensional models, two
USE two dimensional models

diminishing schemes, total variation
USE TVD schemes

disk operating system (DOS)

displacement, crack opening
USE crack opening displacement

Djibouti

(DOS), disk operating system
USE disk operating system (DOS)

DOS (operating system), MS
USE disk operating system (DOS)

drivers, mass
USE mass drivers

dwarf stars, brown
USE brown dwarf stars

dynamics, robot
USE robot dynamics

dynamics, rotor
USE rotor dynamics

E

echelle gratings

edge detection

effectors

electromagnetic coupling

electron-positron pairs

electron-positron plasmas

ellipsometry

Endeavour (orbiter)

engines, liquid oxygen hydrocarbon rocket
USE oxygen-hydrocarbon rocket engines

engines, LOX-hydrocarbon rocket
USE oxygen-hydrocarbon rocket engines

engines, oxygen-hydrocarbon rocket
USE oxygen-hydrocarbon rocket engines

environments, spacecraft
USE spacecraft environments

epsilon turbulence model, k-
USE k-epsilon turbulence model

epsilon turbulence model, kappa-
USE k-epsilon turbulence model

Era, Cenozoic
USE Cenozoic Era

Era, Mesozoic
USE Mesozoic Era

Era, Paleozoic
USE Paleozoic Era

events, flux transfer
USE flux transfer events

F

field aligned currents

films, superconducting
USE superconducting films

flight, transition
USE transition flight

flight, transition
USE transition flight

(fluids), mixing layers
USE mixing layers (fluids)

flux transfer events

Flyby Mission, Comet Rendezvous Asteroid
USE Comet Rendezvous Asteroid Flyby Mission

flyers, man tended free
USE man tended free flyers

fragmentation, satellite
USE spacecraft breakup

free flyers, man tended
USE man tended free flyers

G

galactic bulge

(galaxies), central bulge
USE galactic bulge

galaxies, compact
USE compact galaxies

galaxies, interacting
USE interacting galaxies

(galaxies), nuclear bulge
USE galactic bulge

galaxies, peculiar
USE peculiar galaxies

galaxies, ring
USE ring galaxies

NASA THESAURUS SUPPLEMENT (PART 2)

galaxy interaction
USE interacting galaxies

gallery modes, whispering
USE whispering gallery modes

general circulation models (atmospheric)
USE atmospheric

generation (mathematics), grid
USE grid generation (mathematics)

generation (mathematics), mesh
USE grid generation (mathematics)

geometry, computational
USE computational geometry

global warming

gratings, echelle
USE echelle gratings

graupe

Grenada

grid generation (mathematics)

growth, protein crystal
USE protein crystal growth

H

hairpin vortices
USE horseshoe vortices

helicopters, light
USE light helicopters

Heliospheric Observatory, Solar and
USE SOHO Mission

heliotrons

High Resolution Radiometer, Advanced Very
USE Advanced Very High Resolution Radiometer

holes (mechanics)

horizontal shear waves
USE SH waves

horizontally polarized shear waves
USE SH waves

horseshoe vortices

Hungarian space program

hydrocarbon rocket engines, liquid oxygen
USE oxygen-hydrocarbon rocket engines

hydrocarbon rocket engines, LOX-
USE oxygen-hydrocarbon rocket engines

hydrocarbon rocket engines, oxygen-
USE oxygen-hydrocarbon rocket engines

I

ice clouds

(imagery), boundary detection
USE edge detection

infrared cirrus (astronomy)

input single output systems, single
USE SISO (control systems)

insulator superconductors, superconductor
USE SIS (semiconductors)

integrated circuits, application specific
USE application specific integrated circuits

integrated circuits, custom
USE application specific integrated circuits

intelligence, knowledge bases (artificial)
USE knowledge bases (artificial intelligence)

interacting galaxies

interaction, galaxy
USE interacting galaxies

Ireland, Northern
USE Northern Ireland

iron meteorites, stony-
USE stony-iron meteorites

Israeli space program

K

k-epsilon turbulence model

K-T boundary
USE Cretaceous-Tertiary boundary

kappa-epsilon turbulence model
USE k-epsilon turbulence model

knowledge bases (artificial intelligence)

L

language, C (programming)
USE C (programming language)

Large Deployable Reflector

laser beams

laser power beaming

(lasers), power transmission
USE laser power beaming

(launch system), ALS
USE Advanced Launch System (STS)

Launch System (STS), Advanced
USE Advanced Launch System (STS)

layers (fluids), mixing
USE mixing layers (fluids)

LDR (telescope)
USE Large Deployable Reflector

learning, machine
USE machine learning

learning machines
USE machine learning

light helicopters

liquid oxygen hydrocarbon rocket engines
USE oxygen-hydrocarbon rocket engines

LOX-hydrocarbon rocket engines
USE oxygen-hydrocarbon rocket engines

Luxembourg space program

M

machine learning

machines, learning
USE machine learning

magnetospheres, cometary
USE cometary magnetospheres

magnetospheres, pulsar
USE pulsar magnetospheres

magnetospheres, stellar
USE stellar magnetospheres

man tended free flyers

management, records
USE records management

Mapping Spectrometer, Total Ozone
USE Total Ozone Mapping Spectrometer

Mars Rover Sample Return Mission
USE Mars sample return missions

Mars sample return missions

maser materials

maser pumping

mass drivers

massively parallel processors

materials, maser
USE maser materials

materials, optical
USE optical materials

(materials), phase separation
USE phase separation (materials)

(mathematics), grid generation
USE grid generation (mathematics)

(mathematics), mesh generation
USE grid generation (mathematics)

matter-antimatter propulsion

Mauritius

(mechanics), holes
USE holes (mechanics)

mesh generation (mathematics)
USE grid generation (mathematics)

Mesozoic Era

meteorites, stony-iron
USE stony-iron meteorites

methods, multigrid
USE multigrid methods

Mexican space program

microscopy, scanning tunneling
USE scanning tunneling microscopy

microwave power beaming

(microwave), power transmission
USE microwave power beaming

microwave signatures

mission, Cassini
USE Cassini mission

Mission, Cluster
USE Cluster Mission

Mission, Comet Rendezvous Asteroid Flyby
USE Comet Rendezvous Asteroid Flyby Mission

Mission, CRAF
USE Comet Rendezvous Asteroid Flyby Mission

Mission, Mars Rover Sample Return
USE Mars sample return missions

Mission, SOHO
USE SOHO Mission

missions, Mars sample return
USE Mars sample return missions

mixing layers (fluids)

model, k-epsilon turbulence
USE k-epsilon turbulence model

model, kappa-epsilon turbulence
USE k-epsilon turbulence model

models (atmospheric), general circulation
USE atmospheric

models, three dimensional
USE three dimensional models

models, turbulence
USE turbulence models

models, two dimensional
USE two dimensional models

modes, whispering gallery
USE whispering gallery modes

moonlets

motion, robot
USE robot dynamics

Motor (STS), Advanced Solid Rocket
USE Advanced Solid Rocket Motor (STS)

MPP (computers)
USE massively parallel processors

MS DOS (operating system)
USE disk operating system (DOS)

MTFF (space station)
USE man tended free flyers

multigrid methods

N

Neptune satellites

Nereid

Netherlands space program

New Zealand space program

noise, propeller
USE propeller noise

Northern Ireland

nuclear astrophysics

nuclear bulge (galaxies)
USE galactic bulge

O

Observatory, Solar and Heliospheric
USE SOHO Mission

oligomers

opening displacement, crack
USE crack opening displacement

operating system (DOS), disk
USE disk operating system (DOS)

(operating system), MS DOS
USE disk operating system (DOS)

(operating system), UNIX

(operating system), UNIX
USE UNIX (operating system)

optical materials

orbital breakup
USE spacecraft breakup

(orbiter), Endeavour
USE Endeavour (orbiter)

output systems, single input single
USE SISO (control systems)

oxygen hydrocarbon rocket engines, liquid
USE oxygen-hydrocarbon rocket engines

oxygen-hydrocarbon rocket engines

Ozone Mapping Spectrometer, Total
USE Total Ozone Mapping Spectrometer

P

pairs, electron-positron
USE electron-positron pairs

Pakistan space program

Paleozoic Era

PAN (polyacrylonitrile)
USE polyacrylonitrile

parallel processors, massively
USE massively parallel processors

peculiar galaxies

Period, Cambrian
USE Cambrian Period

Period, Cretaceous
USE Cretaceous Period

Period, Tertiary
USE Tertiary Period

phase separation (materials)

plasmas, electron-positron
USE electron-positron plasmas

polarized shear waves, horizontally
USE SH waves

polyacrylonitrile

(polyacrylonitrile), PAN
USE polyacrylonitrile

polyblends
USE polymer blends

polymer blends

polymers, conducting
USE conducting polymers

positron pairs, electron-
USE electron-positron pairs

positron plasmas, electron-
USE electron-positron plasmas

power, beamed
USE power beaming

power beaming

power beaming, laser
USE laser power beaming

power beaming, microwave
USE microwave power beaming

power transmission (lasers)
USE laser power beaming

power transmission (microwave)
USE microwave power beaming

power transmission, satellite
USE satellite power transmission

processing (computers), vector
USE vector processing (computers)

processors, massively parallel
USE massively parallel processors

program, Argentine space
USE Argentine space program

program, Australian space
USE Australian space program

program, Czechoslovakian space
USE Czechoslovakian space program

program, Hungarian space
USE Hungarian space program

program, Israeli space
USE Israeli space program

program, Luxembourg space
USE Luxembourg space program

program, Mexican space
USE Mexican space program

program, Netherlands space
USE Netherlands space program

program, New Zealand space
USE New Zealand space program

program, Pakistan space
USE Pakistan space program

program, Spanish space
USE Spanish space program

(programming language), C
USE C (programming language)

programming, structured
USE structured programming

propeller noise

propulsion, matter-antimatter
USE matter-antimatter propulsion

protein crystal growth

pulsar magnetospheres

pumping, maser
USE maser pumping

Q

Qatar

quakes, star
USE starquakes

quantization, vector
USE vector quantization

R

Radiometer, Advanced Very High Resolution
USE Advanced Very High Resolution Radiometer

recorders, video tape
USE video tape recorders

records management

reentry breakup
USE spacecraft breakup

NASA THESAURUS SUPPLEMENT (PART 2)

Reflector, Large Deployable
USE Large Deployable Reflector

Rendezvous Asteroid Flyby Mission, Comet
USE Comet Rendezvous Asteroid Flyby Mission

Research Satellite (UARS), Upper Atmosphere
USE Upper Atmosphere Research Satellite (UARS)

Resolution Radiometer, Advanced Very High
USE Advanced Very High Resolution Radiometer

resonance tunneling
USE resonant tunneling

resonant tunneling

Return Mission, Mars Rover Sample
USE Mars sample return missions

return missions, Mars sample
USE Mars sample return missions

rhodamine

riblets

ring galaxies

robot arms

robot dynamics

robot motion
USE robot dynamics

robot sensors

(robotics), arms
USE robot arms

rocket engines, liquid oxygen hydrocarbon
USE oxygen-hydrocarbon rocket engines

rocket engines, LOX-hydrocarbon
USE oxygen-hydrocarbon rocket engines

rocket engines, oxygen-hydrocarbon
USE oxygen-hydrocarbon rocket engines

Rocket Motor (STS), Advanced Solid
USE Advanced Solid Rocket Motor (STS)

rotational spectra

rotor dynamics

rotordynamics
USE rotor dynamics

Rover Sample Return Mission, Mars
USE Mars sample return missions

S

Sample Return Mission, Mars Rover
USE Mars sample return missions

sample return missions, Mars
USE Mars sample return missions

satellite breakup
USE spacecraft breakup

satellite fragmentation
USE spacecraft breakup

satellite power transmission

(satellite), UARS
USE Upper Atmosphere Research Satellite (UARS)

Satellite (UARS), Upper Atmosphere Research
USE Upper Atmosphere Research Satellite (UARS)

satellites, Neptune
USE Neptune satellites

scanning tunneling microscopy

schemes, total variation diminishing
USE TVD schemes

schemes, TVD
USE TVD schemes

Schlichting waves, Tollmien-
USE Tollmien-Schlichting waves

seeing (astronomy)

seeing, atmospheric
USE seeing (astronomy)

(semiconductors), SIS
USE SIS (semiconductors)

sensors, robot
USE robot sensors

separation (materials), phase
USE phase separation (materials)

Seychelles

SH waves

shear waves, horizontal
USE SH waves

shear waves, horizontally polarized
USE SH waves

shell stars

shuttle, Buran space
USE Buran space shuttle

signatures, microwave
USE microwave signatures

single input single output systems
USE SISO (control systems)

single output systems, single input
USE SISO (control systems)

SIS (semiconductors)

SISO (control systems)

SOHO Mission

Solar and Heliospheric Observatory
USE SOHO Mission

Solid Rocket Motor (STS), Advanced
USE Advanced Solid Rocket Motor (STS)

space program, Argentine
USE Argentine space program

space program, Australian
USE Australian space program

space program, Czechoslovakian
USE Czechoslovakian space program

space program, Hungarian
USE Hungarian space program

space program, Israeli
USE Israeli space program

space program, Luxembourg
USE Luxembourg space program

space program, Mexican
USE Mexican space program

space program, Netherlands
USE Netherlands space program

space program, New Zealand
USE New Zealand space program

space program, Pakistan
USE Pakistan space program

space program, Spanish
USE Spanish space program

space shuttle, Buran
USE Buran space shuttle

(space station), MTFF
USE man tended free flyers

(spacecraft), breakup
USE spacecraft breakup

spacecraft breakup

spacecraft environments

Spanish space program

specific integrated circuits, application
USE application specific integrated circuits

spectra, rotational
USE rotational spectra

Spectrometer, Total Ozone Mapping
USE Total Ozone Mapping Spectrometer

splitting, water
USE water splitting

starquakes

stars, brown dwarf
USE brown dwarf stars

stars, shell
USE shell stars

stars, triple
USE triple stars

station, MTFF (space
USE man tended free flyers

stellar magnetospheres

stony-iron meteorites

stratospheric warming

structured programming

(STS), Advanced Launch System
USE Advanced Launch System (STS)

(STS), Advanced Solid Rocket Motor
USE Advanced Solid Rocket Motor (STS)

(STS), ASRM
USE Advanced Solid Rocket Motor (STS)

superconducting films

superconductor insulator superconductors
USE SIS (semiconductors)

superconductors, superconductor insulator
USE SIS (semiconductors)

system, ALS (launch
USE Advanced Launch System (STS)

system (DOS), disk operating
USE disk operating system (DOS)

system, MS DOS (operating
USE disk operating system (DOS)

System (STS), Advanced Launch
USE Advanced Launch System (STS)

system, UNIX (operating
USE UNIX (operating system)

systems, single input single output
USE SISO (control systems)

systems, SISO (control
USE SISO (control systems)

T

T boundary, K-
USE Cretaceous-Tertiary boundary

tape recorders, video
USE video tape recorders

tapes, video
USE video tapes

(telescope), LDR
USE Large Deployable Reflector

tended free flyers, man
USE man tended free flyers

Tertiary boundary, Cretaceous-
USE Cretaceous-Tertiary boundary

Tertiary Period

three dimensional models

Tollmien-Schlichting waves

TOMS
USE Total Ozone Mapping Spectrometer

Total Ozone Mapping Spectrometer

total variation diminishing schemes
USE TVD schemes

transfer events, flux
USE flux transfer events

transition flight
USE transition flight

transition flight

transmission (lasers), power
USE laser power beaming

transmission (microwaves), power
USE microwave power beaming

transmission, satellite power
USE satellite power transmission

transputers

trapped vortices

traps, vortex
USE trapped vortices

trend analysis

triple stars

tunneling microscopy, scanning
USE scanning tunneling microscopy

tunneling, resonance
USE resonant tunneling

tunneling, resonant
USE resonant tunneling

turbulence model, k-epsilon
USE k-epsilon turbulence model

turbulence model, kapp-epsilon
USE k-epsilon turbulence model

turbulence models

TVD schemes

two dimensional models

U

UARS (satellite)
USE Upper Atmosphere Research Satellite (UARS)

(UARS), Upper Atmosphere Research Satellite
USE Upper Atmosphere Research Satellite (UARS)

UNIX (operating system)

Upper Atmosphere Research Satellite (UARS)

urelites

V

variation diminishing schemes, total
USE TVD schemes

vector processing (computers)

vector quantization

Very High Resolution Radiometer, Advanced
USE Advanced Very High Resolution Radiometer

video tape recorders

video tapes

viruses, computer
USE computer viruses

vortex traps
USE trapped vortices

vortices, hairpin
USE horseshoe vortices

vortices, horseshoe
USE horseshoe vortices

vortices, trapped
USE trapped vortices

W

Wales

warming, global
USE global warming

warming, stratospheric
USE stratospheric warming

water spitting

waves, horizontal shear
USE SH waves

waves, horizontally polarized shear
USE SH waves

waves, SH
USE SH waves

waves, Tollmien-Schlichting
USE Tollmien-Schlichting waves

whispering gallery modes

Z

Zealand space program, New
USE New Zealand space program

NASA THESAURUS SUPPLEMENT

PART 3 DEFINITIONS

A

• abundance

The mean **concentration** of an element in a geochemical reservoir, e.g. the abundance of Ni in meteorites or the crustal abundance of oxygen. Also used for the relative average content, e.g. the order of abundance of elements in the earth's crust is O, Si, AL, Fe, Ca, etc. Used for element abundance. *AGI 1968*

AC generators

Generators for the production of alternating-current power. Used for alternating current generators and alternators (generators). *IEEE 1968*

access control

Hardware or software features, operating procedures, or management procedures designed to permit authorized access to a computer system. *IEEE 1968*

• adobe flats

Use flats (landforms)

• advancing shorelines

Use beaches

air data systems

Sets of aerodynamic and thermodynamic **sensors**, and a computer which provide flight parameters such as airspeed, static pressure, air temperature and **Mach number**. *IEEE 1975*

• air masses

Large widespread volumes of **air** having particular characteristics of **temperature** and moisture content that were acquired at its source region and are modified as they move away from their source. *AGI 1968*

• air pollution

The presence of unwanted material in the **air**. The term 'unwanted material' here refers to material in sufficient concentrations, present for a sufficient **time**, and under circumstances to interfere significantly with comfort, health, or welfare of persons, or with the full use and enjoyment of property. Used for atmospheric impurities. *ASTM (D 1356, D-22) 1968*

Alfven waves

Use magnetohydrodynamic waves

• algae

Any plants of a group of unicellular and multicellular primitive organisms that include the **Chlorella**, **Scenedesmus**, and other genera. Used for algal bloom. *SP-7 1968*

• algal bloom

Use algae

• alloys

Substances having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal. *SP-7 1968*

alphanumeric characters

Characters in a set that contain both letters and digits, but they usually also contain other characters such as punctuation symbols. *IEEE 1968*

alternating current generators

Use AC generators

alternators (generators)

Use AC generators

anechoic chambers

Enclosures especially designed with boundaries that absorb sufficiently well the sound incident thereon to create an essentially field-free condition in the **frequency ranges** of interest. *IEEE 1968*

angels (radar)

Echos of false **radar targets** caused by atmospheric inhomogeneity, **atmospheric refraction**, insects, birds, or unknown phenomena. *IEEE 1968*

• anodes

The positive poles or **electrodes** of electron emitters, such as **electron tubes** or electric cells. *SP-7 1968*

• Antarctic regions

The areas surrounding and including the continent of Antarctica. Used for Antarctica. *1968*

• Antarctica

Use Antarctic regions

• anthracite

Coal of the highest metamorphic rank, in which fixed-carbon content is between 92% and 98% (on a dry, mineral-matter-free basis). It is hard and black, and has a semimetallic **luster** and semiconchoidal fracture. Anthracite ignites with difficulty and burns with a short blue flame, without smoke. Used for hard coal. *AGI 1973*

antireflection coatings

Thin dielectric or metallic films applied to an optical surface to reduce the **reflectance** and thereby increase the **transmittance**. Note: The ideal value of the reactive index of a single layered film is the square root of the product of the refractive indices on either side of the film, the ideal **optical thickness** being one quarter of a wavelength. *IEEE 1973*

• apatites

Use minerals

apogees

Those orbital points farthest from the earth, when the earth is the center of attraction. *IEEE 1968*

- **aquatic plants**

Plants growing in or on water. *1981*

- **archipelagoes**

Seas or areas in seas that contain numerous islands; also the island groups themselves. *AGI 1973*

- **aspiration**

Use vacuum

- **astrophysics**

A branch of astronomy that treats of the physical properties of celestial bodies, such as luminosity, size, mass, density, temperature, and chemical composition. Used for geoastronomy. *SP-7 1968*

- **atmospheric electricity**

Electrical phenomena, regarded collectively, which occur in the earth's atmosphere. Also the study of electrical processes occurring within the atmosphere. *SP-7 1968*

- **atmospheric impurities**

Use air pollution

- **atmospheric refraction**

Refraction resulting when a ray of radiant energy passes obliquely through an atmosphere. *SP-7 1968*

- **atmospheric windows**

Wavelength intervals at which the atmosphere transmits the most electromagnetic radiation. *AGI 1972*

- **atolls**

Coral reefs appearing in plan view as roughly circular (though sometimes elliptical or horseshoe-shaped), and surmounted by a chain or ring of closely spaced low coral inlets that encircle a shallow lagoon in which there is no pre-existing land or islands of non coral origin; the reefs are surrounded by deep water of the open sea, either oceanic or continental shelves. Atolls range in diameter from 1 km to more than 130 km, and are especially common today in the western and central Pacific Ocean. Atoll is derived from the native name in the Maldive Islands (Indian Ocean) which are typical examples of this structure. *AGI 1973*

audiometry

The testing and measurement of hearing at various levels. *1968*

automatic pattern recognition

Use pattern recognition

- **azimuth**

Horizontal direction or bearing. Used for solar azimuth. *SP-7 1968*

B**backfire antennas**

Antennas consisting of radiating feeds, reflector elements, and reflecting surfaces such that the antennas function as open resonators, with radiation from the open end of the resonator. *IEEE 1968*

backlobes

Radiation lobes whose axes make angles of approximately 180 degrees with respect to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity. *IEEE 1968*

- **backshores**

Use beaches

- **badlands**

Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interflues. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called 'mauvaises terres' by the early French fur traders. *AGI 1979*

- **bajadas**

Use fans (landforms)

- **barriers (landforms)**

Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. They are built up by the action of waves and currents. *AGI 1972*

- **bars (landforms)**

A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation. *AGI 1973*

- **bayous**

A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U.S., especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water, especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French 'boyau', 'gulf', from the Choctaw 'bayuk', 'small stream'. *AGI 1974*

- **bays (topographic features)**

Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same general character as gulfs. Used for bights and coves. *AGI 1968*

- **beaches**

Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low-water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones. *AGI 1968*

- **beacons**

Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight. *SP-7 1968*

- **bights**

Use bays (topographic features)

- **bioregenerative life support systems**

Use closed ecological systems

- **blazars**

Strongly optical polarized active galactic nuclei objects exhibiting BL Lacertae-like and quasar-like characteristics. 1988

- **bonding**

Specifically, a system of connections between all metal parts of an aircraft or other structure forming a continuous electrical unit and preventing jumping or arcing of static electricity. Glueing or cementing together for structural strength. SP-7 1968

- **breakwaters**

Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls. AGI 1973

C

- **cathodes**

In **electron tubes**, **electrodes** through which a primary stream of electrons enters the interelectrode space. SP-7 1968

- **celestial bodies**

Any aggregations of matter in space constituting a unit for astronomical study, as the sun, moon, a planet, comet, star, or nebula. Also called heavenly bodies. SP-7 1968

- **central processing units**

The units of computing systems that include the **circuits** controlling the interpretation of instructions and their execution. Used for processors (computers). IEEE 1969

- **ceramics**

Inorganic compounds or mixtures requiring **heat treatment** to fuse them into homogeneous masses usually possessing high temperature strength but low ductility. Types and uses range from china for dishes to refractory liners for nozzles. SP-7 1966

- **Chlorella**

A genus of unicellular green algae to be adapted to converting carbon dioxide into oxygen in a closed ecological system. SP-7 1968

- **circuits**

Networks providing one or more closed paths. Used for electric circuits, exploding conductor circuits, shunts, and subcircuits. SP-7 1968

- **closed ecological systems**

Systems that provide for the maintenance of life in an isolated living chamber through complete reutilization of the material available, in particular, by means of a cycle wherein exhaled carbon dioxide, urine, and other waste matter are converted chemically or by **photosynthesis** into oxygen, **water**, and food. Used for bioregenerative life support systems. SP-7 1968

- **coal**

A brown to black combustible sedimentary rock (in the geological sense) composed principally of consolidated and chemically altered plant remains. ASTM (D 2796, D-5) 1968

- **COD (cracks)**

Use crack opening displacement

- **cold cathode tubes**

Electron tubes containing **cold cathodes**. IEEE 1968

- **cold cathodes**

Cathodes that function without the application of **heat**. IEEE 1969

- **coils**

Use gaps (geology)

- **communication satellites**

Satellites designed to reflect or relay electromagnetic signals used for communication. SP-7 1968

- **compasses**

Instruments for indicating a horizontal reference direction, specifically magnetic compasses. SP-7 1968

- **continental margins**

Use continental shelves

- **continental shelves**

The ocean floor that is between the shoreline and the abyssal ocean floor, including various provinces; the continental shelf; continental borderland; continental slope; and the continental rise. Used for continental margins. DOE 1969

- **coves**

Use bays (topographic features)

- **crack opening displacement**

The **displacement** at the mouth of a crack in a material. Used for COD (cracks). 1988

- **critical mach number**

Use Mach number

D

- **discharge tubes**

Use gas discharge tubes

- **discontinuity**

A break in sequence or continuity of anything. SP-7 1968

- **discovering**

Use exploration

- **disk operating system (DOS)**

A program with which the computer performs such mundane but useful tasks as storing, locating, and retrieving files on disk, reading the keyboard, and issuing display and print **information**. 1988

- **displacement**

A vector quantity that specifies the change of position of a body the change of position of a body or particle usually measured from the mean position or position of rest. SP-7 1968

- **ditching (excavation)**

Use excavation

• **Doppler effect**

The change in frequency with which **energy** reaches a receiver when the receiver and the **energy** source are in **motion** relative to each other. Used for DOVAP and stellar Doppler shift.

SP-7 1968

Doppler radar

Radar which utilizes the **Doppler effect** to determine the radial component of velocities of relative **radar** targets or to select targets having particular radial velocities.

IEEE 1968

• **DOVAP**

Use Doppler effect

• **drag**

A retarding **force** acting upon the direction of **motion** of the body. It is a component of the total fluid **forces** acting on the body. Used for drag effect.

SP-7 1968

• **drag effect**

Use drag

• **dullness**

Use luster

E

• **earth figure**

Use geodesy

• **earth shape**

Use geodesy

• **eddies**

Use vortices

• **electric circuits**

Use circuits

electrical conductivity

Use electrical resistivity

electrical resistivity

A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.

IEEE 1968

• **electroacoustic transducers**

Transducers for receiving waves from an electric system and delivering waves to an acoustic system, or vice versa. **Microphones** and **earphones** are electroacoustic **transducers**.

SP-7 1968

electroconductivity

Use electrical resistivity

• **electrodes**

Terminals at which electricity passes from one medium into another. The positive electrodes are called the **anodes**; the negative electrodes are called the **cathodes**.

SP-7 1968

• **electromagnetic radiation**

Energy propagated through space or through material media in the form of an advancing disturbance in electric and **magnetic fields** existing in space or in media. The term **radiation**, alone, is used commonly for this type of **energy**, although it actually has a broader meaning. Used for electromagnetic waves and wave radiation.

SP-7 1968

• **electromagnetic waves**

Use electromagnetic radiation

• **electron tubes**

Devices in which conduction by electrons takes place through a **vacuum** of gaseous medium within a gastight envelope.

SP-7 1968

• **element abundance**

Use abundance

energy dissipation

The difference between **energy** input and **output** as a result of transfer of **energy** between two points. Used for energy loss.

IEEE 1968

energy loss

Use energy dissipation

equatorial orbits

Inclined **orbits** with an **inclination** of zero degrees. The plane of an equatorial orbit contains the equator of the primary body.

IEEE 1968

• **erosion**

Progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multicomponent fluid, or impinging liquid or solid **particles**. Used for scars (geology).

ASTM (G 76, G-2) 1968

error correcting codes

Codes in which each telegraph or data signal conforms to specific rules of construction so that departures from this construction in the received signals can be automatically detected, and permits the automatic **correction**, at the received terminal, of some or all of the errors. Note: Such codes require more signal elements than are necessary to convey the basic **information**.

IEEE 1974

error detection codes

Codes in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of errors is detected. Note: Such codes require more signal elements than are necessary to convey the fundamental **information**.

IEEE 1968

• **escarpments**

Long more or less continuous cliffs or relatively steep slopes facing in one general direction, breaking the continuity of the land by separating two level or gently sloping surfaces, and produced by **erosion** or by faulting. Used for scarps.

AGI 1972

• **eutrophication**

The process by which waters become more eutrophic; especially the artificial or natural enrichment of a lake by an influx of nutrients required for the growth of **aquatic plants** such as **algae** that are vital for fish and animal life.

AGI 1972

• **evaporation**

The physical process by which a liquid or solid is transformed into the gaseous state; the opposite of **condensation**. *SP-7 1968*

• **evapotranspiration**

Loss of **water** from a land area through **transpiration** of plants and **evaporation** from the soil and surface-water bodies. Also, the volume of **water** lost through evapotranspiration. *AGI 1973*

• **excavation**

The act or process of removing soil and/or rock materials from one location and transporting them to another. It includes digging, blasting, breaking, loading, and hauling, either at the surface or underground. Also, a pit, cavity, hole, or other uncovered cutting produced by excavation or the material dug out in making a channel or cavity. Used for ditching (excavation). *AGI 1968*

• **expert systems**

Computer programs that manipulate symbolic **information** to produce the same results as human experts would. They deal with uncertain data and make decisions on that data. Input and design relies on human experts. Used for knowledge based systems. *1983*

• **exploding conductor circuits**

Use circuits

• **exploration**

The search for deposits of useful **minerals** or **fossil fuels**; prospecting, including under the oceans. It may include geologic reconnaissance, e.g. **remote sensing**, photogeology, geophysical and geochemical methods, and both surface and underground investigations. Used for **discovering** and **prospecting**. *AGI 1968*

F

• **fans (landforms)**

Gently sloping, fan-shaped masses of detritus forming sections of very low shaped **cones** commonly at places where there is a notable decrease in gradient; specifically alluvial fans. Also fan-shaped masses of congealed **lava** that formed on steep slopes by the continual changing direction of **flow**. Used for **bajadas**. *AGI 1975*

FDMA

Use frequency division multiple access

feature extraction

Use pattern recognition

field aligned currents

Electric currents aligned along **magnetic fields**. *1988*

finite-state machines

Use Turing machines

• **flats (landforms)**

A general term for level or nearly level surfaces or small areas of land marked by little or no relief such as plains. Also, nearly level regions that visibly display lower relief than their surroundings. Used for **adobe flats** and **salt flats**. *AGI 1974*

• **flood control**

The prevention or reduction of damage caused by flooding, as by containing **water** in reservoirs removed from areas where it would do damage, improving channel capacity to convey **water** past or

through critical areas with the least amount of damage, and diverting excess **water** into bypasses or floodways. *AGI 1976*

• **flood plains**

The surfaces or strips of relatively smooth land adjacent to river channels, constructed by the present rivers in their existing regimens and covered with **water** when the rivers overflow. *AGI 1973*

• **floods**

Rising bodies of **water** (as in **streams**, **lakes**, or seas, or behind dams) that overtop their natural or artificial confines and that cover land not normally underwater. Especially, any relatively high streamflows that overflow their banks in any reach of the stream, or that are measured by **gage height** of discharge quantity. *AGI 1968*

• **fluid transpiration**

Use transpiration

• **folds (geology)**

Curves or bends of a planar structure such as rock strata, bedding planes, foliation, or cleavage. Folds are usually a product of **deformation**, although their definition is descriptive and not genetic and may include primary structures. Used for **nappes**. *AGI 1973*

• **fossil fuels**

A general term for any hydrocarbons that may be used for fuel; chiefly petroleum, natural gas, and coal. *AGI 1974*

• **free electrons**

Electrons which are not bound to an atom. *SP-7 1968*

frequency division multiple access

A method of providing **multiple access** to **communication satellites** in which the transmissions from a particular earth station occupy a particular assigned frequency band. In the satellite the signals are simultaneously amplified and transposed to a different frequency band and retransmitted. The earth station identifies its receiving channel according to its assigned frequency band in the satellite signal. Used for **FDMA**. *IEEE 1979*

• **frequency ranges**

Specifically designated parts of the frequency spectrum. *IEEE 1968*

• **frontal areas (meteorology)**

Use fronts (meteorology)

• **fronts (meteorology)**

The contacts at the Earth's surface between two different **air masses** commonly cold and warm, that generally move in an easterly direction. Used for **frontal areas** (meteorology) and **weather fronts**. *AGI 1968*

G

• **gaps (geology)**

Ravines or gorges cut deeply through a mountain ridge, or between hills or mountains. Used for **cols** and **passes**. *AGI 1975*

gas discharge counters

Use gas discharge tubes

gas discharge tubes

Evacuated enclosures containing a gas at low pressure that permits the passage of electricity through the gas upon application of sufficient voltage. Note: The tubes are usually provided with metal **electrodes**, but one form permits an electrodeless discharge with induced voltage. Used for discharge tubes and gas discharge counters. *IEEE 1968*

• **geostrophysics**

Use astrophysics

• **geostrophysics**

Use geophysics

• **geochemistry**

The study of the distribution of the amounts of the chemical elements in **minerals**, **ores**, **rocks**, **soils**, **water**, and the atmosphere. Also, the study of the **circulation** of the elements in nature, on the basis of the properties of the atom and **ions**. A major concern of geochemistry is the synoptic evaluation of the **abundance** of the elements of the Earth's crust and in major classes of **rocks** and **minerals**. *AGI 1968*

• **geochronology**

The study of time in relationship to the history of the Earth, especially by the absolute age determination and relative dating systems developed for this purpose. *AGI 1968*

• **geodesy**

The science which deals mathematically with the size and shape of the earth, and the earth's external gravity field, and with surveys of such **precision** that overall size and shape of the earth must be taken into consideration. Used for earth figure, earth shape, and **Irsak ellipsoid**. *SP-7 1968*

• **Geodimeters**

Trade name of electronic-optical devices that measure ground distances precisely by electronic timing and phase comparison of modulated light waves that travel from a master unit to a reflector and return to a light-sensitive tube where an electric current is set up. They are normally used at night and are effective with first-order **accuracy** up to distances of 5-40 km (3-25 miles). The term is derived from GEO metric DI stance METER. *AGI 1968*

• **geolectricity**

The Earth's natural electric fields and phenomena. It is closely related to **geomagnetism**. *AGI 1968*

• **geomagnetic field**

Use geomagnetism

• **geomagnetism**

The magnetic phenomena, collectively considered, exhibited by the earth and its atmosphere and by extension the magnetic phenomena in interplanetary space. The study of the magnetic field of the earth. Used for geomagnetic field and terrestrial magnetism. *SP-7 1968*

• **geophysics**

The physics of the earth and its environment, i.e., earth, air, and (by extension) space. Classically, geophysics is concerned with the nature of and physical occurrences at and below the surface of the earth including, therefore, geology, oceanography, **geodesy**, **seismology**, and hydrology. The trend is to extend the scope of geophysics to include **meteorology**, **geomagnetism**, **astrophysics**, and other sciences concerned with the physical nature of the universe. Used for geostrophysics. *SP-7 1968*

• **Glauert coefficient**

Use Mach number

• **gypsum**

The mineral consisting primarily of fully hydrated calcium sulfate (calcium sulfate dihydrate). *ASTM (C 11, C-11) 1968*

gyrocompasses

Compasses consisting of a continuously driven Foucault gyroscope whose supporting ring normally confines the spinning axis to a horizontal plane, so that the earth's rotation causes the spinning axis to assume a position in a plane passing through the earth's axis, and thus to point to true north. *IEEE 1968*

H

• **hard coal**

Use anthracite

• **heat treatment**

Heating and cooling a solid metal or alloy in such a way as to obtain desired conditions or properties. *SP-7 1968*

• **hinge moments**

Use torque

hydromagnetic waves

Use magnetohydrodynamic waves

I

impulse generators

Standard reference sources of broadband impulse energy. *IEEE 1968*

Incoherent scattering

The phenomena of generating waves with random variations in phase, amplitude, **polarization**, and direction of **propagation** when an incident wave encounters matter. *IEEE 1968*

indexes (documentation)

Ordered reference lists of contents of a file or document, together with keys or reference notations for identification or location of those contents. *IEEE 1968*

induction heating

The generation of **heat** in any conducting material by means of magnetic flux-induced currents. *IEEE 1968*

induction motors

AC **motors** in which the primary winding on one member (usually the stator) is connected to the power source and a polyphase secondary winding or a squirrel-cage secondary winding on the other member (usually the rotor) carries induced current. *IEEE 1971*

• **insliers (landforms)**

Areas or groups of **rocks** surrounded by **rocks** of younger age. *AGI 1981*

• **inshore zones**

Use beaches

• **ions**

Charged atoms or molecularly bound groups of atoms; sometimes also **free electrons** or other charged subatomic particles. In **atmospheric electricity**, any of several types of electrically charged submicroscopic particles normally found in the atmosphere. Atmospheric ions are of two principal types, small ions and large ions, although a class of intermediate ions has occasionally been reported. In chemistry, atoms or specific groupings of atoms which have gained or lost one or more electrons, as the chloride ion or ammonium ion. Such ions exist in aqueous solutions and in certain crystal structures. *SP-7 1968*

• **islands**

Tracts of land smaller than a continent, surrounded by the **water** of oceans, seas, **lakes**, or **streams**. The term has been loosely applied to land-tied and submerged areas, and to land cut off on two or more sides by **water**, such as **peninsulas**. *AGI 1968*

• **Izsak ellipsoid**

Use **geodesy**

J

• **jetties**

Use **breakwaters**

K

• **klippen**

Use **outliers (landforms)**

• **knowledge based systems**

Use **expert systems**

L

• **lakes**

Inland bodies of standing **water** occupying depressions in the Earth's surface, generally of appreciable size (larger than a pond) and too deep to permit vegetation (excluding sub aqueous vegetation) to take root completely across the expanse of **water**; the **water** may be fresh or saline. The term includes expanded parts of rivers, reservoirs behind dams, or lake basins intermittently or formerly covered by **water**. *AGI 1968*

• **laminated materials**

Use **laminates**

• **laminates**

Products made by **bonding** together two or more layers of material or materials. Used for laminated materials, laminations, and multilayer structures. *ASTM (C 582, C-3) 1968*

• **laminations**

Use **laminates**

• **lava**

A general term for a molten extrusive; also, for the rock that is solidified from it. *DOE 1968*

LED (diodes)

Use **light emitting diodes**

light emitting diodes

Pn junction semiconductor devices that emit incoherent optical radiation when biased in the forward direction. Used for LED (diodes). *IEEE 1971*

• **lustre**

The appearance characteristic of a specimen due to pronounced changes in **intensity** of light reflected from elemental areas of the specimen when the angle of illumination or view is changed. Used for **dullness**. *ASTM (E 284, E-12) 1968*

M

• **Mach number**

A number expressing the ratio of the speed of a body or a point on a body with respect to the surrounding **air** or other fluid, or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. Used for **critical Mach number** and **Glauert coefficient**. *SP-7 1968*

• **macromolecules**

Use **molecules**

• **magnetic field intensity**

Use **magnetic flux**

• **magnetic fields**

Regions of space wherein magnetic dipoles would experience a magnetic **force** or **torque**; often represented as the geometric array of the imaginary magnetic lines of **force** that exist in relation to **magnetic poles**. *SP-7 1968*

• **magnetic flux**

The magnetic **force** exerted on an imaginary unit magnetic pole placed at any specified point of space. It is a vector quantity. Its direction is taken as the direction toward which a north magnetic pole would tend to move under the influence of the field. If the **force** is measured in dynes and the unit pole is a cgs unit pole, the field intensity is given in oersteds. Used for magnetic field intensity. *SP-7 1968*

• **magnetic poles**

Either of the two places on the surface of the earth where the magnetic dip is 90 deg., that in the Northern Hemisphere (at, approximately, **latitude** 73 deg. 8 N, **longitude** 101 deg. W in 1955) being designated north magnetic pole, and that in the Southern Hemisphere (at, approximately, **latitude**, 68 deg. S, **longitude** 144 deg. E in 1955) being designated south magnetic pole. Either of those two points of a magnet where the magnetic **force** is the greatest. In magnetic theory, a fictitious entity analogous to a unit charge of electrostatic theory. In nature only **dipoles**, not isolate magnetic poles exist. *SP-7 1968*

magnetohydrodynamic waves

Low frequency waves in an electrically highly conducting fluid (such as a plasma) permeated by static **magnetic fields**. The restoring forces of the waves are, in general, the combination of a magnetic **tensile stress** along the magnetic field lines and the compressive stress between the field lines and the fluid pressure. Used for Alfvén waves, hydromagnetic waves, and plasma sound waves. *IEEE 1968*

• **man tended free flyers**

Intermittently manned spacecraft or platforms designed primarily to carry out experiments in **reduced gravity** and life science

research. They also serve as annexes or components of space stations. Used for MTFF (space station). 1969

mass drivers

Electromagnetic devices for the linear acceleration of projectiles or payloads. Applications include orbital insertion and transfer, propulsion systems, and hypervelocity accelerators. 1978

matter-antimatter propulsion

Spacecraft propulsion by use of matter-antimatter annihilation reactions. 1968

• microphones

Electroacoustic transducers which receive acoustic signals and deliver corresponding electric signals. SP-7 1968

• minerals

Naturally occurring inorganic elements or compounds having an orderly internal structure and characteristic chemical compositions, crystal forms, and physical properties. AGI 1968

minimization

Use optimization

mixing layers (fluids)

Fluid layers in which multicomponent mixing occurs. 1968

• molecular flow

The flow of gas through a duct under conditions such that the mean free path is greater than the largest dimension of a transverse section of the duct. SP-7 1968

• molecular weight

The weight of a given molecule expressed in atomic weight units. SP-7 1968

• molecules

Aggregates of two or more atoms of a substance that exists as a unit. Used for macromolecules. SP-7 1968

MS DOS (operating system)

Use disk operating system (DOS)

• MTFF (space station)

Use man tended free flyers

• multilayer structures

Use laminates

• multiple access

The allocation of communication system resources (output) among multiple users by means of power, bandwidth, and power assignment singly or in combination. 1979

N

• nappes

Use folds (geology)

• navigation

The practice or art of directing the movement of a craft from one point to another. Navigation usually implies the presence of a human, a navigator, aboard the craft. SP-7 1968

O

• optical depth

Use optical thickness

• optical thickness

Specifically, in calculations of the transfer of radiant energy, the mass of a given absorbing or emitting material lying in a vertical column of unit cross sectional area and extending between two specific levels. Used for optical depth. SP-7 1968

optimization

The procedure used in the design of a system to maximize or minimize some performance index. May entail the selection of a component, a principle of operation, or a technique. IEEE 1968

optoelectronic devices

Electronic devices combining optic and electric parts. IEEE 1968

• ores

Use minerals

• outliers (landforms)

Areas or groups of rocks surrounded by rocks of older age. Used for klippen. AGI 1977

P

parametric amplifiers

Inverting parametric devices used to amplify a signal without frequency translation from input to output. Used for parametric oscillators and reactance amplifiers. IEEE 1968

parametric oscillations

Use parametric amplifiers

• passes

Use gaps (geology)

pattern recognition

The identification of shapes, forms and configurations by automatic means. IEEE 1968

payload stations

The locations in the Space Shuttles' light decks and cargo bay at which payloads are mounted. 1977

• payloads

Originally, the revenue producing portions of an aircraft's load, e.g., passengers, cargo, and mail. By extension, that which an aircraft, rocket, or spacecraft carries over and above which is necessary for the operation of the vehicle for its flight. SP-7 1968

• peninsulas

Elongated bodies or stretches of land nearly surrounded by water and connected with a larger land area, usually by a neck or an isthmus. The term is derived from the Latin 'paeninsula' 'almost island'. AGI 1968

• pervance

The quotient of the space-charge-limited cathode current by the three-halves power of the anode voltage in a diode. Note: Pervance is the constant G appearing in the Child-Langmuir-Schottky equation. IEEE 1968

Petri nets

Abstract, formal models of the information flow in systems with discrete sequential or parallel events. The major use has been the modeling of hardware systems and software concepts of computers. *IEEE 1968*

• **phase modulation**

Angle modulation in which the angle of a sine wave carrier is caused to depart from the carrier angle by an amount proportional to the instantaneous value of the modulation wave. Combinations of phase and frequency modulation are commonly referred to as frequency modulation. *SP-7 1968*

phase shift keying

The form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave among predetermined discrete values. *IEEE 1968*

photocathodes

Electrodes used for obtaining a photoelectric emission when irradiated. Used for photoelectric cathodes. *IEEE 1968*

photoconductivity

The conductivity increase exhibited by some nonmetallic materials, resulting from the free carriers generated when photon energy is absorbed in electronic transitions. The rate at which free carriers are generated, the mobility of the carriers, and the length of time they persist in conducting states (their lifetime) are some of the factors that determine the amount of conductivity change. Used for photoresistivity. *IEEE 1968*

• **photocurrents**

Use photoelectric emission

photodiodes

Diodes designed to produce photocurrent by absorbing light. Photodiodes are used for the conversion of optical power to electrical power. *IEEE 1968*

photoelectric cathodes

Use photocathodes

• **photoelectric emission**

The emission of electrons from atoms or molecules. Used for photocurrents, photoemission, and photoemissivity. *ASTM (E 673, E-42) 1968*

• **photoemission**

Use photoelectric emission

• **photoemissivity**

Use photoelectric emission

photographic emulsions

The light-sensitive coatings on photographic film consisting usually of silver halide. *IEEE 1968*

photoresistivity

Use photoconductivity

photovoltaic effect

The production of a voltage difference across a pn junction resulting from the absorption of photon energy. The voltage difference is caused by the internal drift of holes and electrons. *IEEE 1968*

piezoelectric transducers

Transducers that depend for their operation on the interaction between electric charge and the deformation of certain materials having piezoelectric properties. Note: Some crystals and specially processed ceramics have piezoelectric properties. *IEEE 1968*

• **piezoelectricity**

The property exhibited by some asymmetrical crystalline materials which when subjected to strain in suitable directions develop polarization proportional to the strain. *SP-7 1968*

plan position indicators

Display devices on which target blips are shown in plan position, thus forming a map-like display, with radial distance from the center representing range and with the angle of the radius vector representing azimuth angle. Used for PPI (position indicators)

plasma sound waves

Use magnetoacoustic waves

• **plastics**

Materials that contain as an essential ingredient one or more organic polymeric substances of large molecular weight, are solid in their finished state, and at some stage in their manufacture or processing into finished articles can be shaped by flow. *ASTM (F 412, F-17, D 883, D-20) 1968*

PPI (position indicators)

Use plan position indicators

processors (computers)

Use central processing units

• **prospecting**

Use exploration

R• **radar targets**

Objects which reflect a sufficient amount of a radar signal to produce an echo signal on the radar screen. *SP-7 1968*

• **radio frequency radiation**

Use radio waves

• **radio propagation**

Use radio transmission

radio sources (astronomy)

Celestial objects that emit radio waves. *IEEE 1968*

• **radio transmission**

The transmission of signals by means of radiated electromagnetic waves other than light or heat waves. Used for radio propagation and radio signal propagation. *IEEE 1968*

radio transmitters

Devices for producing radio-frequency power, for purposes of radio transmission. *IEEE 1968*

• **radio waves**

Waves produced by oscillation of an electric charge at a frequency useful for radio communication. Used for radio frequency radiation. *SP-7 1968*

reactance amplifiers

Use parametric amplifiers

- **receivers**

Initial **components** or sensing elements of measuring systems. For example, the receiver of a thermoelectric thermometer is the measuring thermocouple. Instruments used to detect the presence and to determine the **information** carried by **electromagnetic radiation**. Receivers include **circuits** designed to detect, amplify, rectify, and shape the incoming radio frequency signals received at the antenna in such a manner that the **information** containing component of the received **energy** can be delivered to the desired indicating or recording equipment. Used for receiving systems.

SP-7 1968

- **receiving systems**

Use receivers

- **reduction (mathematics)**

Use optimization

- **reefs**

Chains of **rocks**, sand ridges, or coral at or near the surface of **water**.

DOE 1973

- **reflectance**

The ratio of the radiant **flux** reflected by a body to that incident upon it. Used for reflection coefficient and reflectivity.

SP-7 1968

- **reflection**

The process whereby a surface of **discontinuity** turns back a portion of the incident **radiation** into the medium through which the **radiation** approached.

SP-7 1968

- **reflection coefficient**

Use reflectance

- **reflectivity**

Use reflectance

- **reinforced plastics**

Plastics with some strength properties greatly superior to those of the base resin, resulting from the presence of high-strength fillers imbedded in the composition. Note: The reinforcing fillers are usually fibers, fabrics, or mats made of fibers. The plastic **laminates** are the most common and strongest.

IEEE 1968

- **reluctance**

The ratio of the magnetomotive **force** to the **magnetic flux** through any cross section of the magnetic circuit.

IEEE 1968

- **reluctivity**

Use reluctance

- **remote sensing**

The collection of **information** about an object by a recording device that is not in physical contact with it. The term is usually restricted to mean methods that record reflected or radiated **electromagnetic energy**, rather than methods that involve significant penetration into the Earth. The technique employs such devices as cameras, infrared detectors, microwave frequency **receivers**, and **radar** systems.

AGI 1980

- **resistivity**

Use electrical resistivity

- **resonators**

In radio and **radar** applications, **circuits** which will resonate at a given frequency, or over a range of **frequencies**, when properly excited.

SP-7 1968

- **responders**

Use transponders

- **riblets**

Longitudinal striations forming V-shaped grooves on aerodynamic and hydrodynamic surfaces. The riblet devices act to reduce large-scale disturbances near the boundary layer. These grooves are dimensional on the order of the **wall vortices** and turbulent dimensions.

1988

- **rocks**

Naturally formed aggregates of mineral matter occurring in large masses or fragments. Used for stones (rocks).

ASTM (D 653, D-18) 1968

- **rotational flow**

Use vortices

S

- **salt flats**

Use flats (landforms)

- **scarps**

Use escarpments

- **scars (geology)**

Use erosion

- **sea walls**

Use breakwaters

- **secondary radar**

A **radar** technique or mode of operation in which the return signals are obtained from **beacons**, **transponders**, or repeaters carried by the targets, contrasted with primary **radar** in which the return signals are obtained by **reflection** from the targets.

IEEE 1968

- **sediments**

Solid fragmental materials that originate from **weathering** of **rocks** and are transported or deposited by **air**, **water**, or ice, or that accumulate by other natural agents, such as chemical precipitation from solution or secretion by organisms, and that form in layers on the Earth's surface at ordinary temperatures in a loose, unconsolidated form; e.g. sand, gravel, silt, mud, till, loess, and **alluvium**.

AGI 1968

- **seismology**

The study of earthquakes, by extension, the structure of the interior of the Earth via both natural and artificially generated seismic signals.

DOE 1968

- **shunts**

Use circuits

- **silts**

Use sediments

- **SOHO Mission**

One of the joint NASA/ESA missions comprising the International Solar Terrestrial Program. The SOHO Mission will investigate the physical processes in the solar corona and **solar wind** and the structure and **dynamics** of the solar interior.

1989

- **Solar and Heliospheric Observatory**

Use SOHO Mission

- **solar azimuth**

Use azimuth

- **solar plasma (radiation)**

Use solar wind

- **solar wind**

Streams of plasma flowing approximately radially outward from the sun. Used for solar plasma (radiation). *SP-7 1968*

- **stellar Doppler shift**

Use Doppler effect

- **stones (rocks)**

Use rocks

- **stratospheric warming**

A temperature rise in the global stratosphere. *1988*

- **streams**

Bodies of flowing **water**, great or small, contained within channels as well as uncontained fluids such as **air**. *DOE 1968*

- **subcircuits**

Use circuits

T

- **tensile stress**

Normal stress tending to lengthen the body in the direction in which it acts. *ASTM (D 653, D-18) 1968*

- **terrestrial magnetism**

Use geomagnetism

- **thermocouples**

Devices which convert thermal energy directly into electrical energy. In its basic form it consists of two dissimilar metallic electrical **conductors** connected in a closed loop. Each junction forms a thermocouple. *SP-7 1968*

- **tomboles**

Use bars (landforms)

- **torque**

About an axis, the product of a **force** and the distance of its line of action from the axis. Used for hinge moments. *SP-7 1968*

- **transconductance**

The real part of the transadmittance. Note: Transconductance is, as most commonly used, the interelectrode transconductance between the control grid and the plate. At low frequencies, transconductance is the slope of the control-grid-to-plate transfer characteristic. *IEEE 1986*

- **transducers**

Devices capable of being actuated by **energy** from one or more other **transmission** systems or media and of supplying related **energy** to one or more other transmission systems or media as **microphones** or **thermocouples**. *SP-7 1968*

- **transmittance**

The ratio of the radiant **flux** transmitted by a medium or a body to the incident **flux**. *SP-7 1968*

- **transpiration**

The passage of gas or liquid through a porous solid (usually under conditions of **molecular flow**). Used for fluid transpiration. *SP-7 1968*

- **transponders**

Combined receiver and transmitter whose function is to transmit signals automatically when triggered by an interrogator. Used for responders. *SP-7 1968*

- **trapped vortices**

Air flow in rotary **motion** but trapped relative to leading edge vortex separation, which increases not only **lift** but also **drag**. The trapped vortices result in **thrust** and reduced **drag**. Used for vortex traps. *1980*

- **trend analysis**

A management tool for evaluating variation in data with the ultimate objective of forecasting future events based upon an examination of past results. *1989*

- **trigger circuits**

Circuits that have two conditions of stability, with means for passing from one to the other when certain conditions are satisfied, either spontaneously or through application of an external stimulus. *IEEE 1968*

- **Turing machines**

Mathematical models of devices that change their internal states and read from, write on, and move potentially infinite tapes, all in accordance with their present states, thereby constituting models for computerlike behavior. Invented in the 1930's, they are named after their inventor, A.M. Turing. Used for finite-state machines. *IEEE 1968*

V

- **vacuum**

A given space filled with gas at pressures below **atmospheric pressure**. Used for aspiration. *SP-7 1968*

- **vortex columns**

Use vortices

- **vortex disturbances**

Use vortices

- **vortex flow**

Use vortices

- **vortex traps**

Use trapped vortices

- **vortex tubes**

Use vortices

- **vortices**

In fluids, circulations drawing their **energy** from flows of much larger scale and brought about by **pressure** irregularities. Used for eddies, rotational flow, vortex columns, vortex disturbances, vortex flow, and vortex tubes. *SP-7 1968*

W

• **water**

Dihydrogen oxide (molecular formula H_2O). The word is used ambiguously to refer to the chemical compound in general and to its liquid phase; when the former is meant, the term **water substance** is often used. *SP-7 1968*

wattmeters

Instruments for measuring the magnitude of the active power in an electric circuit. They are provided with a scale usually graduated in either watts, kilowatts, or megawatts. If the scale is graduated in kilowatts or megawatts, the instruments are usually designated as kilowattmeters or megawattmeters. *IEEE 1968*

• **wave radiation**

Use **electromagnetic radiation**

• **weather fronts**

Use **fronts (meteorology)**

• **weathering**

The process of disintegration and decomposition as a consequence of exposure to the atmosphere, to chemical action, and to the action of frost **water** and **heat**. *ASTM (D 653, D-18) 1968*

whip antennas

Thin flexible monopole antennas. *IEEE 1968*

whispering gallery modes

Electromagnetic (or elastic) waves that differ in frequency by more than an order of magnitude. *1988*

NASA THESAURUS SUPPLEMENT

PART 4 CHANGES

ACCESS CONTROL
Definition replaced by IEEE definition

CHAOS
Scope note deleted

COMMUTER AIRCRAFT
USE GENERAL AVIATION AIRCRAFT
Deleted, term made postable

COMMUTER AIRCRAFT
USE PASSENGER AIRCRAFT
Deleted, term made postable

DOPPLER RADAR
Definition replaced by IEEE definition

LEARNING MACHINES
Transferred to MACHINE LEARNING

MAGNETOHYDRODYNAMIC WAVES
Definition replaced by IEEE definition

MASS DRIVERS (PAYLOAD DELIVERY)
Transferred to MASS DRIVERS

SATELLITE POWER TRANSMISSION (TO EARTH)
Transferred to SATELLITE POWER TRANSMISSION

TOLMEIN-SCHLICHTING WAVES
Transferred to TOLLMIEIN-SCHLICHTING WAVES

TRAPPED VORTEXES
Transferred to TRAPPED VORTICES

1. Report No. NASA SP-7064 (Suppl. 3)	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle NASA Thesaurus Supplement		5. Report Date March 1990	
		6. Performing Organization Code	
7. Author(s)		8. Performing Organization Report No.	
		10. Work Unit No.	
9. Performing Organization Name and Address Scientific and Technical Information Division National Aeronautics and Space Administration Washington, DC 20546		11. Contract or Grant No.	
		13. Type of Report and Period Covered	
12. Sponsoring Agency Name and Address		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract The four part cumulative <i>NASA Thesaurus Supplement</i> to the 1988 edition of the <i>NASA Thesaurus</i> includes Part 1, Hierarchical Listing, Part 2, Access Vocabulary, Part 3, NASA Thesaurus Definitions, and Part 4, Changes. The semiannual supplement gives complete hierarchies for new terms. Uppercase-lowercase forms are provided in both Part 2 and Part 3.			
17. Key Words (Suggested by Author(s)) Dictionaries Indexes (Documentation) Information Retrieval Terminology Thesauri		18. Distribution Statement Unclassified - Unlimited Subject Category 82	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 36	22. Price * A03/HC

**END
DATE
FILMED**

JUL 12 1990